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Regional Airport Management Study

Prepared for

The Southern California Association of Governments (SCAG)

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EXECUTIVE SUMMARY

In recent years the focus of the SCAG Region's airport debate has shifted from finding new airport capacity to better utilization of existing capacity. The existing urban airports are highly constrained and encroached while available capacity is concentrated at suburban airports in the Inland Empire and North Los Angeles County. As a result, the regional airport ground access issue is becoming paramount. SCAG's Regional Aviation Plan recommends decentralizing passenger and air cargo service from congested urban airports to outlying suburban airports where capacity is available. Its implementation requires identifying appropriate regional governance mechanisms and strategies to better coordinate the Region's airport, ground access, and related planning and development.

This Regional Airport Management Study addresses that need. The Study's purposes are to: (a) identify, compare, and evaluate the nation's leading approaches to regional airport and ground access governance and coordination; (b) determine what management system is most appropriate for the SCAG Region consistent with the 2004 RTP's "Regional Airport Consortium" concept; and (c) develop an efficient implementation plan for the selected prototype(s). The right governance system ensures that the entity is an effective vehicle for implementing a broad range of SCAG regional policies, ranging from aviation and ground transportation to growth visioning and coordination with the proposed Maglev joint powers authority.

Methodologically, we review existing surveys and research, and conduct a supplemental survey of the nation's 18 largest metropolitan areas concerning their airport systems and governance, ground access systems, and regional airport and ground access planning. We conducted Internet surveys, and interviewed airport and transportation officials and planners in Southern California and around the country. Based upon this research, we offer in-depth analyses of five exemplar case studies depicting leading regional airport management and ground access approaches relevant to the airport consortium concept. The exemplars are: (a) the Boston/New England area and its regional airport consortium; (b) the Sacramento region with niche planning for Mather Airport, an all-cargo facility; (c) the Dallas/Fort Worth region with DFW Airport jointly owned and operated by the two cities, and proposals for a rail system linking airports for connecting flights; (d) the Washington/Baltimore region providing multi-modal transportation services for the three major hub airports; and (e) the now-dormant Southern California Regional Airport Authority (SCRAA), a multi-jurisdictional joint powers authority which once served as a potential vehicle for airport decentralization and regionalization.

Our research suggests that while many regional airport management options appear available, most are inconsistent with a multi-jurisdiction, multi-airport "airport consortium" concept. Thus, we exclude pure federal, state, county, municipal, regional or port district models of metropolitan airport management. We believe that three governance arrangements stand out in terms of their political and legal feasibility: (a) a New England-style Regional Airport Consortium memorandum of understanding (MOU); (b) a reconstituted SCRAA; and (c) a new joint powers authority (JPA).

New England-Style MOU: The New England Regional Airport Consortium consists of an MOU between ten airports and six states to perform joint planning and marketing to encourage service at the region's secondary airports and relieve pressure at Boston's congested Logan International Airport. A similarly modeled SCAG Region Airport Consortium MOU (or JPA) might consist of representatives from the ten commercial airports, from the respective county transportation commissions in Los Angeles, Orange, Riverside and San Bernardino Counties, from other relevant agencies such as the Southern California Regional Rail Authority (Metrolink) and the Southern California Association of Governments. Consideration should also be given to participation by commuter airport operators and transportation agencies in Ventura and Imperial Counties. At some point, there can even be consideration of a Mega-Region approach, incorporating all of Southern California's commercial airports and transportation agencies from Santa Barbara to San Diego County. Also, more structure than the New England Consortium would be desirable, which has no bylaws and meets on an ad hoc basis.

Reconstituted SCRAA: A second approach would be to revive and reconstitute the inactive Southern California Regional Airport Authority, which remains fully funded. SCRAA's membership consisted of the City of Los Angeles, and Los Angeles, San Bernardino, Orange and Riverside Counties. Two members have withdrawn, and L.A. city has not sent a representative since 2001. Lacking the required three members, there is no quorum. Should a quorum be created, SCRAA might conceivably be turned into a simplified and more flexible organization. A new mission, bylaws and membership would need to be defined for SCRAA consistent the concept of a Regional Airport Consortium in SCAG's 2004 Regional Transportation Plan (RTP). A major difficulty is that all changes in power, authority and membership require a unanimous vote.

A New JPA: A third option would be to create a new joint powers authority (JPA). Such an entity would not be burdened by SCRAA's apparent record of failure. A new JPA could create a more inclusive membership and adopt more flexible and consensus-building rules. This might be done in conjunction with the official dissolution of SCRAA, with unspent member contributions transferred to the new JPA to jumpstart the process. Relative to a MOU, a JPA under the California Government Code can be a separate organizational entity with powers and authority bestowed upon its participating governmental jurisdictions. The joint powers agreement can authorize a policymaking board or commission that may—or may not—consist of elected officials.

The Study's major findings regarding an airport consortium structure and implementation strategy are as follows:

(1) The Regional Airport Consortium should have an inclusive membership, and Los Angeles World Airports should take a leading role. The Consortium should initially be constituted in terms of planning and feasibility responsibilities. A phased approach gives needed time to resolve critical issues of institutional design, mission and powers. It also allows time to develop a close working relationship with SCAG. The Consortium should aim for inclusive membership: the region's commercial airport operators, county transportation commissions, relevant transportation agencies such as SCAG and the Southern California Regional Rail Authority, and other stakeholders. The Consortium might start out with a few committed members and have others join over time as its value is demonstrated. However, there is a minimum participation threshold. At the very least, it requires active City of Los Angeles, Inland Empire, and SCAG

participation. In particular, the Los Angeles World Airports should play a leading role in initiating and assuring the continuity of the new entity. The first priority of Los Angeles World Airports should be the development of an Integrated System Plan for the airports it owns and operates, which identifies complementary roles and market niches for each airport and financial mechanisms for achieving decentralization of service. This system plan would then be expanded through the Consortium to incorporate non-LAWA airports in the region, to implement the decentralization strategies in the adopted Regional Aviation Plan.

(2) There are distinct tradeoffs between MOU and JPA approaches. An MOU-based approach to regional airport governance has the benefits of ease of creation and flexibility. The qualitative difference between a MOU and JPA approach involves the amount of formal authority invested. The MOU creates little formal authority. In contrast, the JPA approach gives the regional entity enhanced powers for achieving the collective goals of its members. This approach also commits its members to ongoing participation and decision-making processes. A strategy for minimizing the shortcomings of the MOU approach would be to invest it with more structure than is typical of MOU-based organizations. As part of the MOU agreement, the participating parties could agree to meet on a regular basis, and develop bylaws that would structure their deliberations towards achieving identified goals and objectives.

(3) A "structured" MOU is the preferred approach to creating an initial Regional Airport Consortium. The Consortium should be based at least initially on the MOU approach, but with more structure than is typical of MOU organizations. It should have bylaws and meet regularly. A "structured" MOU-based consortium could eventually evolve into a JPA, after a period of confidence building among the members who may decide that the organization would be enhanced with the greater structure, permanence and continuity of a JPA. However, the powers of the JPA should not include eminent domain or operating, siting and developing airports, since these powers are inconsistent with the Regional Airport Consortium concept in SCAG's 2004 RTP. To allay the concerns of constrained urban airports and their communities, a precondition should be that all legally enforceable constraints and policies cannot be changed by subsequent amendment. To build needed consensus, a supermajority voting rule may be desirable. More study would be needed to examine the desirability of evolving the "structured" MOU approach into a JPA, and identifying the optimal membership, powers and duties of the JPA, and whether it should be a reconstituted SCRAA or a new JPA.

(4) Airport consortium roles should include implementing SCAG policies, collaborative marketing, and serving as an information clearinghouse and intergovernmental interface. The Regional Airport Consortium needs to work hand-in-hand with SCAG in developing and implementing the RTP. For example, it should rank airport ground access projects for the RTP every three to four years. The consortium should identify complementary roles and market niches between airports, and promote consideration of innovative ways to achieve improved ground access to underutilized suburban airports, including high-speed rail access. An academic Peer Review Team, similar to the group formed in New England, might be created to provide needed input and project review.

Similarly to the New England Airport Consortium the new entity should consider launching a collaborative marketing venture, bringing the suburban passenger and cargo airports to the attention of the travel and tourist industries, and industries dependent

upon air cargo shipments. Working with the region's business organizations, the new airport consortium should consider sponsoring a Fly Southern California conference, linking the airports with the airlines and their schedulers, travel agents, the tourist industry, the freight industry, and relevant industry associations. Collaborative marketing can serve the needs of constrained urban airports as well. Here the consortium should focus marketing efforts on flights and services most benefiting these urban communities.

The consortium can be a clearinghouse and interface for the region's airport operators. Thus, it can share information regarding new federal and state policy mandates, and might serve as a critical coordinating interface between the region's airport system and relevant federal agencies (such as the FAA, TSA, EPA, and DOT) and their California counterparts. The consortium can also be a forum for sharing best management practices among the region's airport operators, such as how to implement air quality plans with cost-effective emission reduction strategies. Finally, it can share information on innovative financing techniques, particularly needed by the smaller airports to make necessary improvements (see Appendix III).

REGIONAL AIRPORT MANAGEMENT STUDY

OVERVIEW AND OBJECTIVES

The SCAG Region's current airport management system is among the most decentralized and complex in the nation if not the world. The 12 urban and suburban commercial airports in the six-county region are operated by ten separate governing bodies, ranging from municipal departments (Los Angeles World Airports and Long Beach's Public Works Department), to county agencies (e.g., Orange County's John Wayne Airport), to facilities operated as Joint Powers Authorities (e.g., Bob Hope [formerly Burbank] Airport, operated by the Burbank-Glendale-Pasadena Airport Authority).

In recent years the focus of the Region's airport debate has shifted from finding new airport capacity to better utilization of existing capacity. The existing urban airports are highly constrained and encroached while available capacity is concentrated at suburban airports in the Inland Empire and north Los Angeles County. Given that passengers are concentrated in the coastal areas of Los Angeles and Orange Counties, the regional airport ground access issue is becoming paramount. That challenge will only increase in the future. By the year 2030, air passenger demand in the SCAG Region is projected to nearly double and air cargo demand to triple.

With SCAG's 2004 adopted Regional Aviation Plan, a dormant Southern California Regional Airport Authority, and proposed legislation to create a Southern California Regional Aviation Commission (AB 1197), this is an appropriate time to consider new regional governance, management, and coordination mechanisms for the Region's airport and ground access systems. The Regional Aviation Plan recommends decentralizing passenger and air cargo service from congested urban airports to outlying suburban airports where capacity is available. Its implementation requires identifying appropriate regional governance mechanisms and strategies to better coordinate the Region's airport, ground access, and related planning and development. This Regional Airport Management Study addresses that need.

What are the most promising available alternatives in terms of governance and management structures for the SCAG Region's multi-airport and ground access systems? Other large metropolitan areas have faced similar challenges in designing effective regional governance and coordination arrangements for multi-airport and ground access systems. A host of different governance approaches have been developed. One model features a state (or even multi-state) multi-purpose authority operating airports, ports, bridges and tunnels. This is the case in the New York and Boston metropolitan areas. Even here coordination challenges can arise. In New England, Greater Boston's population growth has crossed state lines, creating demand for suburban airports. Thus, Massport (a state agency operating Boston's congested Logan International Airport and other facilities) faces the challenge of coordinating airport planning and marketing with neighboring states.

Elsewhere, local governments—counties, cities, regional authorities, or joint powers authorities—manage one or more facilities in multi-airport systems. For example, in South Florida, county agencies run airports in Miami-Dade, Palm Beach, and Fort Lauderdale-Hollywood. In the Bay Area, city agencies or municipally appointed district boards manage the San Francisco, Oakland, and San Jose international airports. In such cases, potential coordination involves co-equal jurisdictions. Other metropolitan areas are of interest because they are experimenting with new airport governance systems. In San Diego County, a Regional Airport Authority has been created to operate and even expand Lindbergh Field, and to site, plan, build, and operate a new regional airport. Also of interest are structures of representation. Each regional airport governance arrangement features a distinct system of representation, ranging from state appointees to regional and locally appointed or elected representatives.

The purposes of this study are to: (a) identify, compare, and evaluate the leading approaches to regional airport and ground access governance and coordination; (b) determine what management system is most appropriate for the SCAG Region consistent with the 2004 RTP's "Regional Airport Consortium" concept; and (c) develop an efficient implementation plan for the selected prototype(s). Methodologically, we review existing surveys and research, and conduct a supplemental survey of 18 large metropolitan area's airport governance and transportation systems (using the internet, telephone surveys, and other sources). Based upon this research, we offer in-depth

analyses of five exemplar regional case studies depicting leading airport management and ground access coordinating approaches of relevance to the SCAG region.

This Regional Aviation Management Study is one of the elements of the Regional Aviation Implementation Study. The other elements include: (a) the Ground Access Element (located in the *2004 RTP* Technical Appendix, pp. D-6-86 through D-6-177); and (b) the Financial Element (which can be found in Appendix III of this report).

SURVEYING REGIONAL AIRPORT GOVERNANCE AND GROUND ACCESS

Surveying metropolitan-area airport authorities and regional transportation agencies can establish a useful baseline of regional airport governance and ground access institutional arrangements and planning practices around the country. We are particularly interested in metropolitan regions with multi-airport, multi-jurisdictional systems featuring (a) airport/mass transit connections; and (b) airport and ground access coordination among airport, metropolitan planning, and transportation agencies. Such regional airport and transportation systems can help determine potential management strategies for implementing the "Regional Airport Consortium" concept and the Regional Aviation Plan as delineated in the 2004 RTP. We utilize both existing surveys/research and a supplemental survey of airport and transportation management and planning structures in 18 large metropolitan regions.

Existing Surveys and Research: We have incorporated SCAG aviation staff's initial survey work on airport authorities into our own research and case study analyses.[1] We also have canvassed and incorporated into our research other relevant airport survey data. One such survey is the Airports Council International-North America's 2003 General Information Survey of 126 North American airports.[2] The ACI-NA survey examined hub status (e.g., large hub); airport ownership; passenger load; and physical characteristics such as land size, number of runways, passenger and cargo terminals, and subway/rail links.

The ACI-NA survey shows the critical importance of local government entities to the nation's commercial airport system. Ninety percent of the U.S. air carrier airports are owned or operated by local governments. Municipal ownership is the most common

U.S. ownership pattern (38%), followed by regional/airport authorities (25%), single counties (17%), and multiple local government jurisdictions (9%). States account for only five percent of the total, while unified port authorities represent another three percent. The federal government owns two airports: Ronald Reagan Washington National (National) and Dulles International Airports.[3]

We also canvassed the U.S. Government Accountability Office's (GAO) July 2005 intermodal survey of 72 large-hub, medium-hub, and selected small-hub airports regarding existing and planned bus and rail connections. The hub sizes are defined by the Federal Aviation Administration (FAA).[4] This survey includes all 33 large hub airports, all 35 medium hubs, and 4 small hub airports located in the same metropolitan area as a large or medium hub airport.[5] The GAO data set on existing and planned airport bus and rail connections for these airports is incorporated into our survey work. However, it should be noted that finding out whether a particular airport has a rail or bus connection is probably the minimum needed to assess public transit accessibility to the airport.[6] The GAO intermodal study also includes a more detailed survey of 14 large-hub metropolitan airports, their intermodal facilities, and key local stakeholders.

The GAO survey found that most major U.S. airports have some direct intermodal ground connections, but that they were primarily to local transportation systems rather than nationwide systems. Nearly 90 percent of the major airports reported direct connections to local bus services while only one-third (27) reported direct connections to local rail systems. The level of rail access varied. While 22 airports reported that passengers could access local rail stations by shuttle, only 13 reported that passengers could walk or use a people mover to the nearest rail station. A number of airports have plans to improve their intermodal services, primarily by enhancing connections to local rail and bus services. The GAO study also identified the challenges of enhancing airport intermodal service. In addition to the chronic problem of funding, one of the obstacles identified was the need to secure coordination across multiple local boundaries, particularly for longer transportation corridors.[7]

We also examined existing research on large metropolitan region multi-airport systems. Here the work of Richard de Neufville, Amedeo R. Odoni, Philippe A. Bonnefoy, and R. John Hansman primarily focuses on the market dynamics influencing the development of

secondary airports in large metropolitan areas with core airports.[8] This work provides useful surveys of large metropolitan area multi-airport systems, and their core and secondary airports. We use this data to cross-check our survey and case study analyses regarding the character and dynamics of regional airport systems.

In terms of multi-airport system planning, De Neufville emphasizes the need for a strategic, incremental, and flexible planning model for multi-airport systems. This reflects the need to make investments that insure the future; to phase modest, sequential investments based on proven opportunities; and to build in flexibility to manage evolving situations.[9] De Neufville's strategic model is considered in our implementation strategy section.

There is little research on multi-airport system governance *per se*. For airport governance generally, de Neufville and Odoni develop a typology of alternative "models" of airport ownership and management currently in use around the world. They develop various airport owner/airport operator combinations based upon the roles of the national government; local or state/regional governments; corporate entities; private investors; and airport management contractors. The authors single out the autonomous airport authority as a useful model as airports become busier, more complex, and more important to local and national economies. The advantages of the airport authority include ownership and management flexibility. Further, they argue that the authority "is an institutional device that has proved largely successful in partially insulating airports from political interference and in promoting effective management."[10]

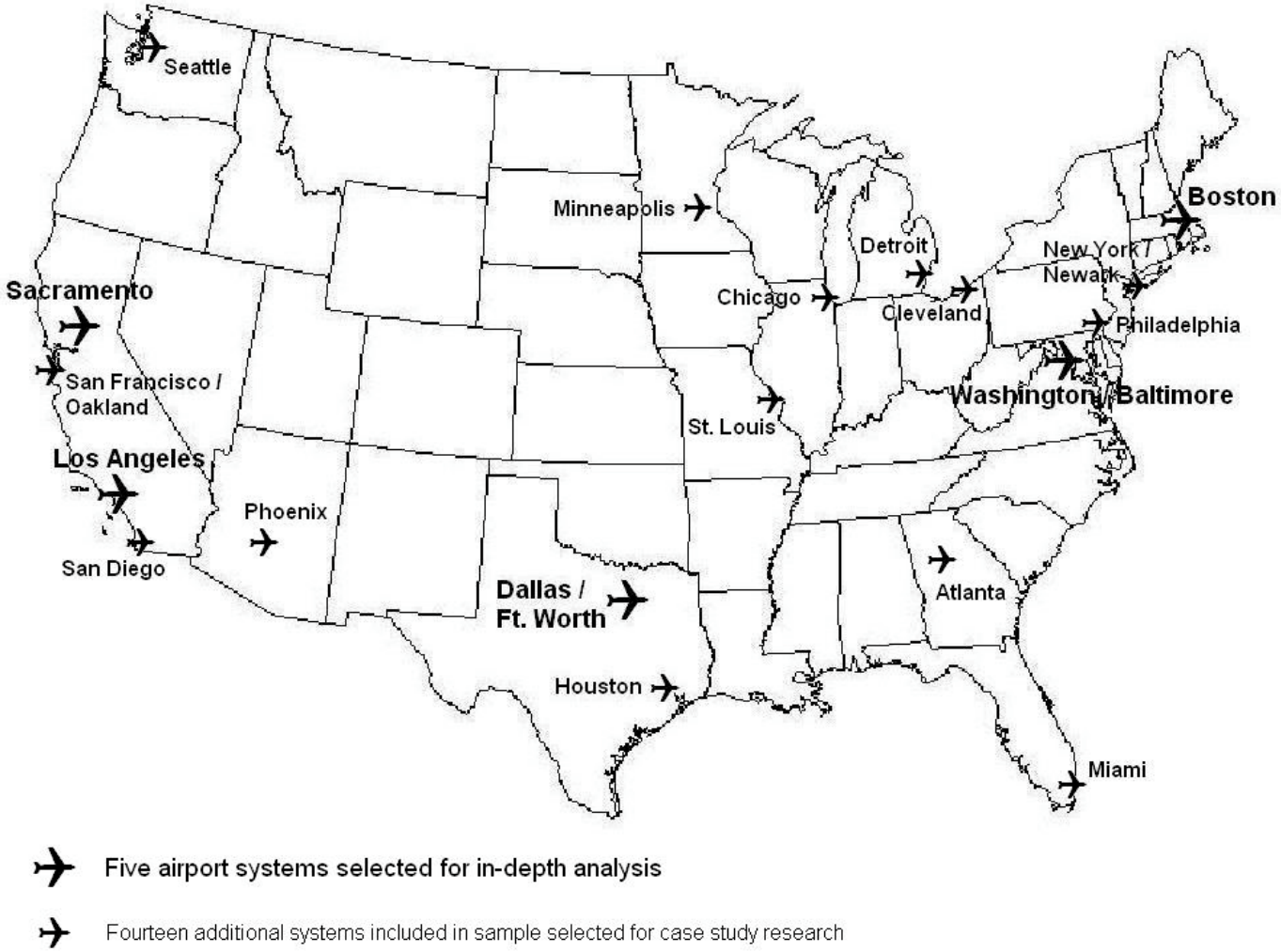
Steven G. Craig, James Airola, and Manzur Tipu have compared the cost structures of single-purpose airport authorities versus city-operated airports for the country's 100 largest airports, 1979 to 1992. They find that institutional design matters. Independent authorities encourage specialization, and prompt and flexible decision making. Single-purpose authorities also are better at adopting cost saving innovations and responding more quickly to technical change. These benefits, however, come at a cost. Authority-run airports are more concerned than their city-operated counterparts with the utility of their workforce, which results in higher labor and other input costs.[11]

In one of the few studies of airport consolidation, Charles Sander argues that "the track record in managing multi-airport systems has been poor, and consolidation efforts have often been beset by expensive false starts and mistakes."[12] He cautions those undertaking consolidation to learn from past mistakes. Sander concludes that the development of multi-airport systems has been most effective when operating through an independent or semi-independent authority or company.[13]

There also is relevant research on general models of metropolitan governance. Surveying historical trends, Larry S. Bourne observes an "apparent trend away from the establishment of formal metropolitan governments toward other forms of regional cooperation and management."[14] David B. Walker has developed a useful typology of 17 approaches to regional governance ranging from easier to harder in terms of political feasibility (but not necessarily effectiveness).[15] Among the easiest are informal cooperation, interlocal service contracts, and joint powers agreements. Walker's regional governance model informs our discussion of appropriate airport governance structures for the SCAG Region. Clearly, more research is needed on multi-airport governance. Our study aims to contribute to an understanding of the types of leading management and coordination structures currently utilized in air and ground transport in large metropolitan areas.

Regional Airport Governance and Ground Access Survey of 18 Largest Metropolitan Areas: To fill in gaps in existing surveys and research, we conducted a supplemental survey of airport governance and ground access structures for the nation's 18 largest metropolitan areas. Based on the 2000 census, we examined consolidated metropolitan statistical areas, from New York-Northern New Jersey-Long Island to St. Louis, while excluding the Los Angeles-Riverside-Orange County area. The Sacramento-Yolo California region—the nation's 24th largest metropolitan area—also was included. This allows us to consider California's three largest airport systems outside of the Los Angeles area—the Bay Area, San Diego, and Sacramento. These systems are all governed by California law regarding airport and ground access governance, and development. Figure 1 shows the metropolitan airport and ground access systems surveyed and the five exemplar cases selected for in-depth analysis.

Figure 1
Airport and Ground Access Systems Surveyed in Largest U.S. Metropolitan Areas



By focusing on large metropolitan regions, we are able to survey the multi-airport, multi-jurisdictional systems most comparable to the SCAG Region. One complicating factor is that, for some regions, the regional airport system extends beyond the boundaries of the consolidated metropolitan statistical area (CMSA). For example, the Boston-Worcester-Lawrence CMSA is also served by a commercial airport in the Providence-Fall River-Warwick metropolitan statistical area. Miami-Fort Lauderdale is also served by the Palm Beach International Airport. We include all major commercial airports serving a metropolitan area.

For each metropolitan area, we survey the airport system, airport governance arrangements, the ground access system, and airport-relevant regional planning. We have gathered data using the Internet, telephone surveys, and other secondary sources to evaluate regional airport systems, their overseeing jurisdictions, regional transportation agencies, and metropolitan planning organizations. We spoke with local officials affiliated with the airports, and transportation and planning agencies.

This research yielded case studies of the 18 metropolitan areas, which depict each region's airport system, airport governance arrangements, ground access structures, and regional planning (particularly for airport and ground access). These case studies are displayed in Appendix I. The survey data also are shown in four tables for each metropolitan region. These tables are presented in Appendix II. These provide a concise summary of the status of the regional airport, ground access, and planning systems in the nation's largest metropolitan areas. To our knowledge, this is the most comprehensive survey of metropolitan area airport governance, ground access, and planning conducted to date.

Table A1, based on the ACI-NA survey data, displays commercial air transportation facilities and traffic patterns for the 18 metropolitan regions. It displays the region's commercial airports; their type (e.g., large hub); number of affiliated airports; owner of the airports; type of ownership (e.g., municipal); passengers (CY2004); land area (acres); number and size of runways; passenger terminals; passenger gates; cargo tonnage (CY2004); cargo buildings; and parking spaces. Table A2 displays metropolitan

area airport ownership and governance arrangements. For each airport, it lists ownership, the airport operator, and the policymaking authority.

Table A3 shows airport ground transportation facilities for each region. For each airport, it shows, for both rail and bus links, the operator, governing board, size, and appointing authorities. Finally, Table A4 displays airport system and ground access planning in the metropolitan areas. For each airport, it shows the designated metropolitan planning organization (MPO) and its geographic jurisdiction; governing entity; and whether the MPO currently performs air system and/or ground access planning.

Drawing from the case studies and tables, several patterns of relevance to the SCAG region are evident. First, there are only a few multi-airport systems featuring a large hub airport coupled with medium- and/or small-hub airports. (We define a multi-airport system as de Neufville does in terms of traffic at a second airport.) For the 18 regions, only eight feature multi-airport systems: New York, Chicago, Washington-Baltimore, the Bay Area, Boston, Dallas-Fort Worth, Houston, and Miami-Fort Lauderdale. (See Appendix II, Table A1.) Regarding airport governance, six of the eight multi-airport systems are multi-jurisdictional: Chicago, Washington-Baltimore, the Bay Area, Boston, Dallas, and Miami-Fort Lauderdale. In contrast, New York (a port authority) and Houston (a municipal system) feature single jurisdiction, multi-airport structures. (See Appendix II, Tables A1 and A2.)

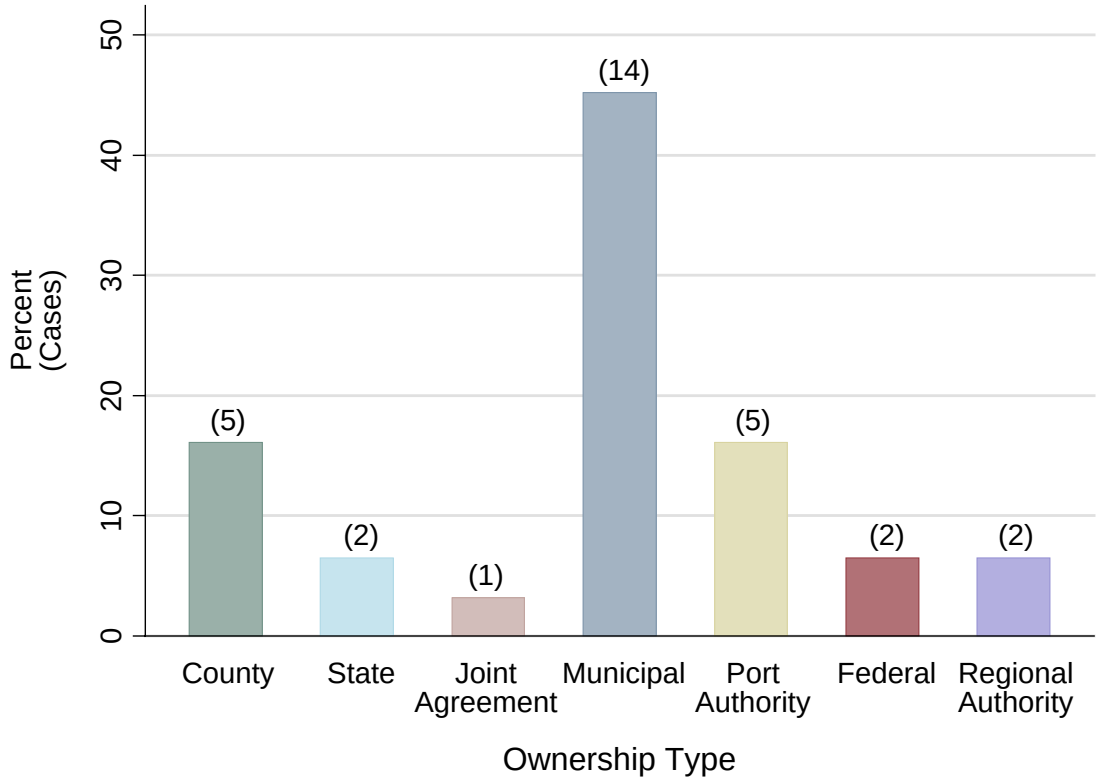
For these multi-airport, multi-jurisdictional systems, there is a broad array of governance arrangements. Some areas feature municipal entities only. Thus, the three major air carrier airports in the Bay Area are owned and operated by the Cities of San Francisco, Oakland (the Port District governing board is appointed by the mayor and city council), and San Jose. For other areas, the hub airports are county entities. Thus, the three air carrier airports serving the Miami area are owned and operated by Miami-Dade, Broward, and Palm Beach Counties. For other regions, there are combinations of state and municipal airport entities (Boston), municipal and county entities (Chicago), or state and federal entities (Washington-Baltimore).

Of particular relevance for the SCAG Region are joint governance agreements and regional consortia. Thus, the Dallas-Fort Worth International Airport is jointly owned by

the Cities of Dallas and Fort Worth, and jointly operated by an airport board composed of 11 representatives from the two cities plus one non-voting member from a neighboring community. (See Appendix II, Table A2.) In the New England area, ten regional airports have innovatively banded together as an airport consortium for joint marketing and airport system planning purposes.

For the 31 large- and medium-hub airports in the 18 metropolitan areas, local governance arrangements predominate: over two-thirds are locally owned. Figure 2 displays the ownership of these larger hub airports.

Figure 2
Ownership of 31 Large and Medium Hub Airports in 18 U.S. Metropolitan Areas



Source: ACI-NA, *Highlights of the 2003 General Information Survey*

Nearly one-half (14) are municipally owned while another one-sixth (5) are county owned. Regional airport authorities own only six percent (2) of these large- and

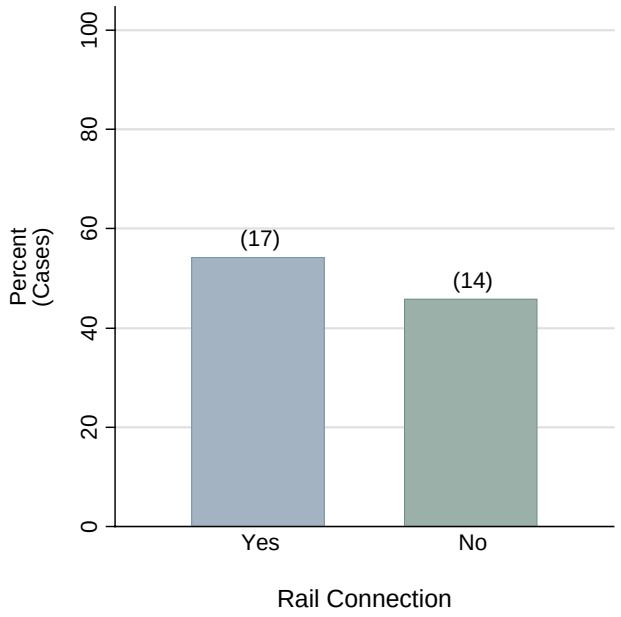
medium-hub airports. In contrast, state entities (agencies, port and airport authorities) own nearly one-quarter (7) of the hub airports, while the federal government owns the two airports in the Washington D.C. area operated by a regional airport authority. (See Appendix II, Tables A1 and A2.)

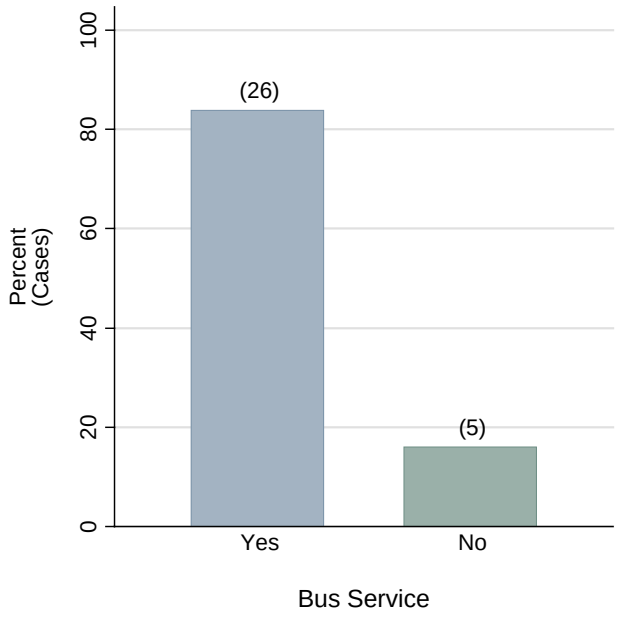
In all the metropolitan area airport systems surveyed here, there are only a few all-cargo airports such as are being developed in the SCAG Region. The Dallas-Fort Worth area features Fort Worth Alliance Airport, a municipally owned but privately operated cargo airport. In the Detroit area, Willow Run Airport operates as an air-cargo facility without commercial passenger service (although it has corporate, charter, and general aviation activity). Willow Run is operated by the same county airport authority that runs Detroit Metropolitan Wayne County Airport. In Sacramento, Mather Airport (a former military air base) is an all-cargo facility. It is owned and operated by the Sacramento County Airport System, which also runs Sacramento International Airport. (See Appendix II, Table A1.)

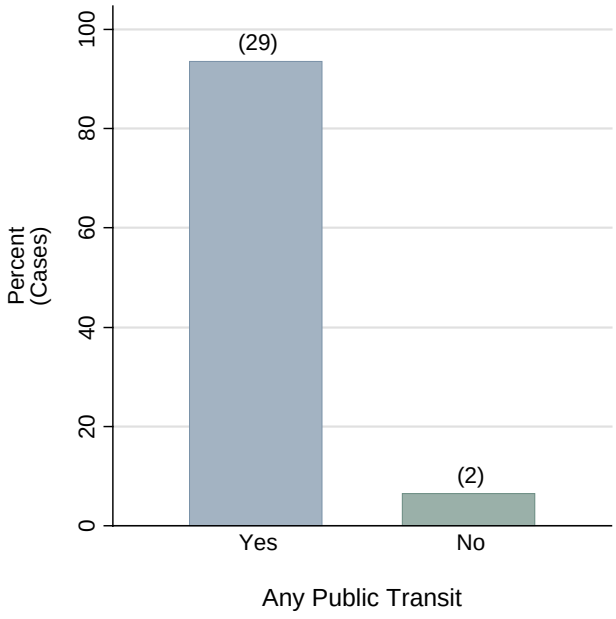
Figure 3 displays public transit availability at the 31 large- and medium-hub airports in the 18 metropolitan areas. Nearly of the hub airports report having some form of public transit service, with more being planned.[16] Most have bus service. For the 22 large-hub airports surveyed, the two lacking bus service have rail service instead: Boston's Logan International Airport, and Atlanta's Hartsfield-Jackson International Airport. Some form of rail service is available at more than one-half of the large- and medium-hub airports, with service being planned for other hub airports. But the public transit data, as reported in the GAO survey, do not report the quality and regional accessibility of rail service for individual airports. (See Appendix II, Table A3.)

With the exception of Houston, the eight multi-airport systems surveyed (New York, Chicago, Washington-Baltimore, the Bay Area, Boston, Dallas-Fort Worth, Houston, and Miami-Fort Lauderdale), all offer some form of rail service to at least one large-hub airport. (Bus service is currently available to Houston's Bush Intercontinental Airport.) Pertinent to SCAG regional planning, five of the eight multi-airport systems report rail service to more than one airport: New York (JFK, Newark); Chicago (O'Hare, Midway); Washington-Baltimore (BWI, National, and planned for Dulles); the Bay Area (SFO and Oakland); and Miami-Fort Lauderdale (Miami and Fort Lauderdale/Hollywood airports).

Figure 3
Public Transit Availability at Large and Medium Hub Airports







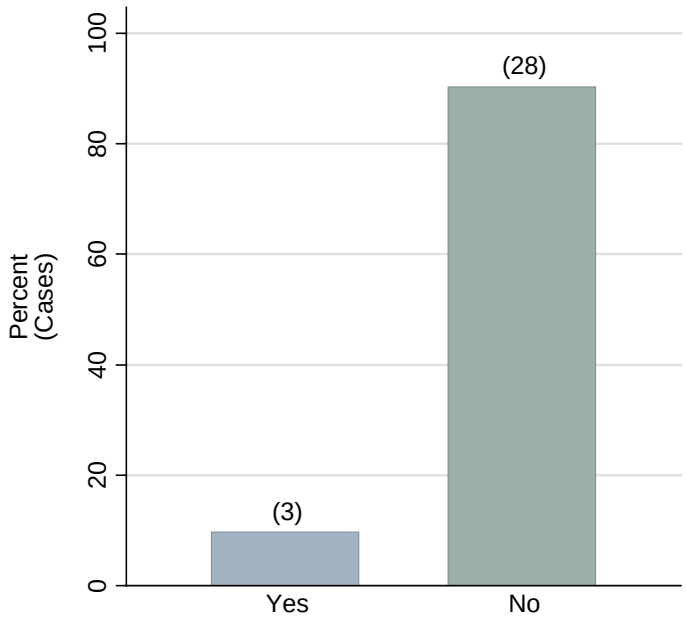
Sources: Appendix A, Table 3, and GAO, *Survey of Large- and Medium-Hub Airports on Existing and Planned Bus and Rail Connections* (GAO-05-738SP) (Washington, D.C.: GAO, July 2005)

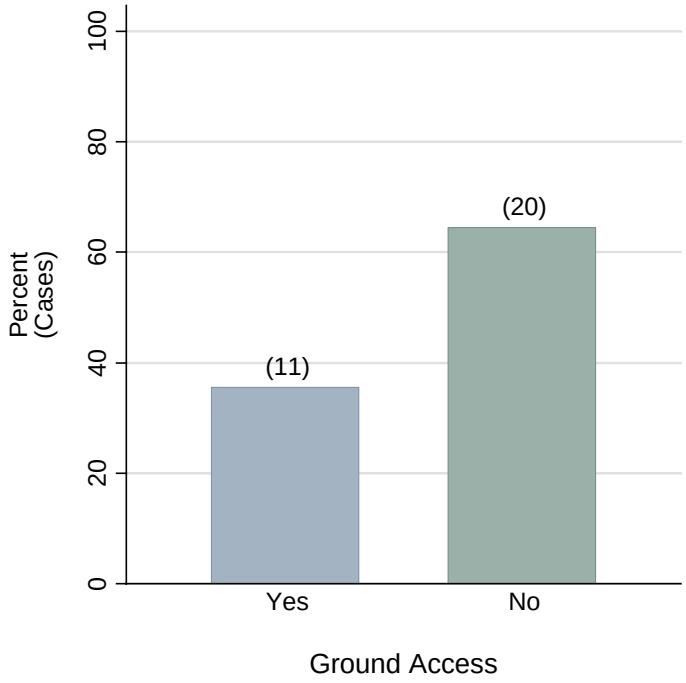
Relevant to the SCAG Region, the Washington-Baltimore, Bay Area, and Miami-Fort Lauderdale multi-airport airport systems—which feature multiple rail connections—are multi-jurisdictional in terms of airport governance as well. (See Appendix II, Table A3.)

In their governance arrangements, regional ground transportation systems are decentralized, perhaps even more so than with airports. One often finds several transportation agencies working within the same region. For example, the Sacramento metropolitan area's public transportation needs are served by the City of Sacramento, and Sacramento and Yolo Counties. Such decentralization complicates the planning and coordination processes for linking air and ground transport. Yet there are a few instances where the airport system and ground transportation systems are controlled by the same jurisdiction. Such is the case with Chicago and Cleveland. (See Appendix II, Table A4.) Even with regional transportation leviathans, it is an open question whether those planning and operating airports and public transit will have common interests.

Figure 4 shows that there is limited ground access planning and little airport system planning performed by SCAG-like metropolitan planning organizations (MPOs). For the 31 hub airports surveyed in 18 regions, only one-third (N=11) have MPOs performing airport ground access planning. Only ten percent (N=3) of the metropolitan hub airports have their MPOs performing some sort of airport system planning. For the eight multi-airport systems surveyed, five have some form of MPO ground access planning (New York, Washington-Baltimore, Bay Area, Miami-Fort Lauderdale, and Sacramento). But in only two regions (New York, Washington-Baltimore) do the MPOs also perform some level of airport system planning. However, we were unable to determine the extent, quality and effectiveness of such planning by MPOs. (See Appendix II, Table A4.)

Figure 4
Airport System and Ground Access Planning by Metropolitan Planning Organizations for 31 Hub Airports in 18 U.S. Metropolitan Areas





Source: Appendix A, Table 4

THE "AIRPORT CONSORTIUM" CONCEPT: FIVE EXEMPLARS

Based on the Regional Airport Governance and Ground Access Survey of 18 metropolitan areas and the preliminary work conducted for the SCAG Aviation Authority Survey, we have selected five exemplar regional airport (and ground access) governing arrangements for more refined case study evaluation and analysis: (1) Boston/New England; (2) Sacramento; (3) Dallas-Fort Worth; (4) Washington-Baltimore; and (5) the dormant Southern California Regional Airport Authority (SCRAA).

In terms of case study selection, we developed several general screening criteria consistent with the SCAG Region's "Airport Consortium" concept. First, we eliminated most airport authorities with sweeping powers, including those that own and operate airports. Second, we included case studies of some authorities that might otherwise be eliminated because they have desirable elements that could be carried over into an airport consortium. All five cases chosen are consistent with one or more components of the SCAG Region's "Airport Consortium" concept. We have conducted in-depth analyses of their governance structures and dynamic. We also have identified and analyzed any coordination mechanisms and approaches with regional transportation and planning agencies.

We are particularly interested in (a) leading exemplars of regional airport governance arrangements most relevant to the "Airport Consortium" concept; and (b) innovative approaches to airport and ground access planning and coordination in multi-airport, multi-jurisdictional regions. Thus, the Southern California Regional Airport Authority is one of the few multi-jurisdictional airport joint powers authorities. There are valuable lessons to be learned from studying SCRAA's checkered history, from its once-considerable promise and powers in the 1980s to its current dormant state. Can SCRAA be reactivated and reconstituted in a looser, more flexible confederation-like form?

The Boston/New England Airport Consortium arrangement is also of considerable interest. As an informal working agreement, it has sponsored innovative airport system planning and marketing initiatives. The Dallas-Fort Worth International Airport (DFW) is of interest because it is operated under a joint agreement between the Cities of Dallas and Fort Worth, with representatives from both cities and neighboring communities

sitting on the Airport Board. Given the SCAG Region's evolving niche markets, we are also interested in multi-airport regions that plan for specialized air-cargo airports and their development. Here, the Sacramento County Airport System (SCAS) is a leading exemplar that includes Mather all-cargo airport. For the Sacramento airport system, we are particularly interested in how they identify niches for their airports (e.g., primarily commercial, air cargo, or corporate), and how this has affected their planning implementation and airport system development.

We also are interested in regional ground access systems, planning and coordination in multi-jurisdictional, multi-airport systems. An example of successful multi-jurisdictional coordinated ground access planning is the New England region. Another example is the Dallas-Fort Worth region, which features planned direct rail linkages between several airports. Also chosen for in-depth analysis of ground access planning is the Washington-Baltimore area, which features two airport operators (the Maryland Aviation Administration and the Metropolitan Washington Airports Authority). There are excellent rail links to Baltimore-Washington International Airport (BWI), National Airport (DCA). A rail system is being planned to Dulles International Airport (IAD). How was this extensive rail system planned? We also are interested in learning from transit planning failures. Thus, we examine Sacramento, where a fragmented transit system appears to have hindered building a rail system to Sacramento International Airport (SAC).

For the five case studies, we have gathered data via Internet and telephone surveys with local airport and planning officials and other knowledgeable stakeholders. The case study data collected included information on the processes by which airport and ground access systems were created; their management structures, governance and representational arrangements; legal authority, roles and responsibilities; airport master planning and facilities development planning and coordination mechanisms; relationships to regional transportation and planning agencies; and airport and ground access successes and shortcomings.

(1) Boston/New England Region

The Airport System: Greater Boston's multi-jurisdictional, multi-airport system includes airports located in three states, including Providence, Rhode Island; Manchester, New Hampshire; and Boston, Massachusetts.[17] This system serves the Boston metropolitan

area (2000 pop.: 5.8 million) as well as the adjacent Providence area. The sixth busiest airport in the U.S., Boston's Logan International (BOS or Logan) is the core hub airport, serving over 26 million passengers in 2004 and representing nearly two-thirds of all commercial air travelers through New England airports. Logan is also the region's major air cargo facility.[18] Logan is ringed by four smaller regional airports within an hour's drive: Manchester (MHT), a Southwest hub and reliever airport; T.F. Green Airport in Providence (PVD), also a Southwest hub and reliever airport; Hanscom Field (BED), a commuter/commercial and light cargo reliever airport; and Worcester Airport (ORH).[19]

The Boston area airports are part of an airport regionalization initiative spanning the six New England states and a total of ten airports. In 1990, the Massachusetts Aeronautics Commission (MAC), a state agency, conducted a study of possible sites for a second major airport in Massachusetts to relieve crowded Logan Airport. After no other feasible site was found, a follow up study recommended as an alternative the development of a network of regional airports throughout New England. The Massachusetts Port Authority (Massport) took the lead in promoting regional airports to relieve congestion at Logan Airport. Massport is an independent public authority of the Commonwealth of Massachusetts, created in 1956 to own and operate Boston's Logan International Airport, L.G. Hanscom Field, the Tobin Memorial Bridge, and designated facilities at the Port of Boston. It later acquired Worcester Regional Airport. By the mid-1990s, Massport planners assumed that a high speed rail system would be needed to divert traffic to other New England airports.[20]

A 1995 New England Regional Air Service Study evaluated long-term regional air travel demand and airport capacity, and recommended greater regional coordination to reduce congestion at Logan Airport. Massport responded by launching a partnership with the region's other airports to show them growth and marketing opportunities. Nine New England potential reliever airports were identified: Bradley International, CT; T.F. Green/Providence, Warwick, RI; Manchester, NH; Portland, ME; Burlington, VT; Bangor, ME; Tweed New Haven, CT; Hanscom Field, MA; and Worcester, MA. Massport sponsored a market opportunity workshop for the airports, inviting airlines and their route schedulers, and assisted with various joint marketing efforts. Massport also entered into a compact with the governors from the six New England states and the region's airports, and helped create a New England airport consortium with a legislative and marketing

agenda. The New England Council, a private business organization, also played a catalytic lobbying role in creating the consortium.[21]

In the past decade, Manchester (MHT), T.F. Green (PVD), and Bradley (BDL) airports have experienced significant growth.[22] Yet it is unclear how critical joint marketing efforts were in generating this secondary airport growth given powerful market forces and other factors. Logan had become one of the nation's most congested airports, ranking as the second most delayed for arriving passengers. Centrifugal market forces, rising fuel costs, heightened post 9/11 security concerns and delays, and the strategic entry of discount airlines into regional airports (the so-called "Southwest effect") appear to have been major driving forces behind New England's dramatic regional airport growth. For example, following the entry of Southwest Airlines as a low-cost carrier in the late-1990s, Providence (PVD) and Manchester (MHT) soon accounted for over one quarter of total passenger enplanements in the region.[23]

Thus, it appears that market forces more than marketing efforts determined the early success of New England's regional airports. In airports where Southwest began service, there were dramatic double digit increases in passenger traffic. For regional airports bypassed by the "no-frills" air carriers, traffic actually dropped. Thus, even though Massport entered into an agreement with the City of Worcester in 1995 to aggressively market Worcester Regional Airport (ORH), the airport experienced a one-third decline in passengers by 1999 as Southwest launched service elsewhere. In response, in 2000 Massport signaled its commitment to developing a critical mass of air service at ORH by assuming operating responsibility for the airport. However, as of September 2005, no commercial airline service was being offered at Worcester.[24]

Airport Governance and Planning: What is most innovative about airport governance in the region is the New England Regional Airport Consortium. This six-state, ten-airport group envisions itself as a cooperative venture of multiple airport authorities and state transportation agencies. These members are committed to relieving and managing future congestion at Boston's Logan International Airport by encouraging service at secondary airports in the region. Viewed as a cooperative venture of the region's air travel stakeholders, including multiple airport authorities, this consortium approach offers the advantage of attracting new air carrier services and passengers to regional airports

without loss of local control. The airport compact has resulted in the production of brochures about New England for the tourism and travel industries that include all of the airports on a map. Joint marketing of the region and its airports has been a centerpiece of the consortium.[25]

The Airport Consortium was created by a memorandum of understanding (MOU). There are no bylaws, and the participants meet on an ad hoc basis. According to one participant, "it is a loose consortium of aviation actors huddled together by Massport and the FAA with a common goal."[26] Representatives from each of the six New England state transportation planning departments, state aviation directors, airport directors from the region's airports, the FAA and the Volpe Transportation Center meet in workshops to identify emerging issues, constraints on regional airport growth, and new opportunities for New England's regional airport system. Cooperative efforts include studies of passenger access to regional airports, and of alternative transportation systems. While there is no formal coordination of airport master planning, the consortium members are working on a common database regarding demand and market shares.[27]

In the words of one close observer, the New England Regional Airport Consortium "hasn't happened yet" in terms of instituting a formal structure, bylaws, and powers. The last meeting was held in late 2004, and many plans remain on the back burner. Thus, instead of an operational entity, the Airport Consortium remains an informal agreement between various agencies to meet as needed on an ad hoc basis. The group next plans to study how demand is spread out across the region, and to address such issues as individual airport forecasting.[28]

The FAA regional planning office in New England appears to be very interested in the success of the consortium. Local FAA officials have embraced regionalism, and set aside FAA funds for this effort. Consortium consulting work is jointly paid for by the FAA, Massport, and MAC. Massport and the State of Massachusetts act as sponsors of system planning. An oversight committee comprised of the six participating states and the airport managers approve policy and review the consultants' work. There also is an academic peer review team to conduct and review demand forecasts. In 2001, the FAA, the New England States, Massport, and the airport agencies initiated a comprehensive update of the New England Regional Airport System Plan to evaluate the region's air

travel behavior; forecast the region's future air transportation demand; inventory resources; identify desirable ground access and capacity improvements; examine airport issues from a regional perspective; identify potential actions or policies to meet New England's long-term aviation needs; and recommend future marketing strategies. A key coordinating role is played by the Plan's consultants, who publish newsletters and technical papers, and provide public notification of meetings.[29]

In terms of regional airport planning and governance, Massport plays a critical and catalytic role. The Governor of Massachusetts appoints the seven members of the Massport Board of Directors to staggered seven-year terms. Massport's Chief Executive Officer serves at the Board's pleasure. Massport has the power of eminent domain in certain circumstances but has no taxing power. This organizational structure reflects the competitive environment in which the agency operates. It is designed to flexibly respond to diverse stakeholders: the airlines; airport and property tenants; bondholders, bridge commuters; cargo shippers; residents of Massachusetts and New England; government agencies; impacted communities; Massport employees, security agencies, suppliers and vendors; and air travelers. Massport is wholly funded by revenue bonds and user fees.[30]

The mission of Massport is to develop, promote, and manage the airports, seaport, and transportation infrastructure in order to enable Massachusetts and New England to compete in the global marketplace. Because Massport receives no state tax support and is financially self-sustaining, it must consider competitive market forces within the aviation, maritime, surface transportation and property development industries. Massport's airport-related initiatives include expanding the joint marketing and promotion efforts of New England's regional airports to more fully develop their air service market potential; aggressively promoting and developing Worchester airport to meet the needs of central Massachusetts; and strengthening interstate transportation partnerships for better airport road and rail access.[31]

Ground Access and Planning: The Massachusetts Office of Transportation Planning provides information and coordination for the Commonwealth's Regional Transit Authority's (RTA) rapid transit and bus service systems and the Massachusetts Bay Transport Authority's (MBTA) commuter rail system.[32] One-fifth of Logan Airport passengers now use public transportation. Commuter rail is used by 10 percent of

Logan's air passengers—one of the nation's highest rail travel rates.[33] Amtrak shares North and South Station rail facilities in downtown Boston (two miles from Logan) with the MBTA's commuter rail service. South Station Amtrak trains either operate along the Northeast Corridor route (providing service to Providence, New Haven, New York City, Philadelphia, Baltimore and Washington, D.C.), or along the Inland route through Framingham, Worcester, Springfield, and Hartford, connecting with the Northeast Corridor route in New Haven. North Station trains provide service to Portland. A rebuilt Airport Station on the MBTA's Blue Line and better connections with the South Station via the Silver Line and the Airport Intermodal Transit Connector are two recent projects facilitating rail access to Logan Airport.[34] However, there is no freight rail access to Logan Airport, and no provisions for its future development.[35]

A New England Regional Transportation Summit led by Massachusetts Governor Jane Swift and officials from the other New England states targeted regional transportation initiatives including full development of New England's regional airport potential. Rhode Island's governor has proposed legislation to extend commuter rail service to Providence's T.F. Green Airport. Although broad initiatives to strengthen interstate transportation partnerships for rail and highway transportation are evident, it appears that high speed rail planning efforts have met considerable resistance. Massport has sponsored improved rail and bus service between Logan Airport and Providence. To improve airport ground access, Massport is also looking at the Logan Express remote HOV bus system to connect to other airports in Massachusetts and Rhode Island.[36] The State of Massachusetts has adopted a Fix-It-First policy, focusing less on transportation improvements than on bringing its infrastructure and equipment to a state of adequate repair. Regional leaders have focused on efforts to preempt community and environmental activists in airport and public transit controversies.[37]

Lessons for the SCAG Region

(a) Airport Consortium Concept: The New England Region offers valuable insights for the SCAG Region with their innovative Regional Airport Consortium approach, and success in decentralizing air passenger growth by utilizing available capacity at regional airports and existing airfields. Over the past decade, Massport, MAC, the FAA, the New England Council, the Council of New England Governors, and the New England state aviation and transportation directors have undertaken long-term

regional transportation planning studies and strengthened regional transportation networks and coordination. Massport and MAC were the key public sector initiators, with the FAA and the private sector New England Council playing collaborative roles.

The consortium participants have collaborated on efforts to encourage greater use of regional airports and to provide information to help market themselves and the region to the airlines and the travel and tourist industries. Collaborative efforts include estimating airport passenger use; marketing air carriers via route development conferences; tracking air fares at regional airports; and increasing capital investment at the regional airports such as new terminals, runway extensions, roadways and other support facilities. Regional leaders also promote the advancement of regional transportation initiatives by stimulating discussion and coordination among federal, regional, and state aviation and transportation stakeholders.[38]

While meetings at the state level take place on an ad hoc basis, there is considerable cooperation and coordination among consortium's participants regarding specific projects. Thus, for the New England Regional Airport System Plan (NERASP) Phase II update, there are three levels of focused activity. First, at the ground level, are Massport, MAC, the FAA and the consultants, who hold weekly teleconferences and closely cooperate on regional research and planning efforts. Second, there is the Project Management Team, comprised of the ground level participants, plus representatives from the ten airports and six state DOTs. Here, five or six meetings have been held over the past three and one-half years regarding project reports and updates. Third, there is a peer review team of six professors to provide technical advice and expertise on such issues as aviation demand and forecasting. To date, there have been eight or nine such meetings. As the NERASP update is being completed, public meetings and state legislature presentations are being planned.[39]

(b) Capitalizing on Market Opportunities: Regional coordination appears to have successfully exploited market forces, reducing the pressure on Logan Airport by attracting about seven million new passengers to regional airports since 1999.[40] Eight out of ten new air passengers in New England are using the regional airports rather than Logan, representing a reversal of the historic pattern where 80 percent of the region's air passengers chose Logan Airport. The coordinated approach to planning and

development of New England's regional transportation system appears to have provided passenger relief to Logan Airport, reduced airspace and highway congestion, and offered air travelers better choices closer to home.[41]

New England's regional aviation, transportation, and planning officials can claim political credit for the savvy exploitation of market trends and opportunities.[42] Even if market dynamics and external events represented the primary forces behind New England's success in decentralizing activity to regional airports, lessons can be learned on how to strategically plan for and adapt to these changing dynamics in an optimal way. Regional coordination, targeted capital investments, and joint marketing efforts can exploit changing dynamics in the aviation market in order to optimally utilize secondary airports.

(2) Sacramento Region

The Airport System: The Sacramento County Airport System (SCAS) consists of four airports, each with a well-defined role in the region's air transportation network.[43] This system serves a metropolitan area of 1.8 million residents. Sacramento International Airport (SMF) is the region's major commercial hub airport. Sacramento Executive Airport, located 10 minutes from downtown Sacramento, is the primary corporate and general aviation facility. Franklin Field, which currently lacks an air traffic control tower, serves general aviation customers. Mather Airport specializes in handling air cargo traffic, but is also responsible for about 25 percent of the region's general aviation flights.

In developing its complementary set of niche facilities, the SCAS has responded to opportunities created by airline industry developments and military base closures. Until 1967, the City of Sacramento owned and operated the region's only commercial airport, Sacramento Municipal Airport. In 1967, commercial service was moved to newly constructed Sacramento Metropolitan Airport. The new airport was built on the northeast side of the city, away from the region's high-growth areas. This decision left airport officials with ample room to expand the facility. Sacramento Metropolitan, renamed Sacramento International Airport in 1996, is owned and operated by Sacramento County. The City also transferred to the County ownership of Sacramento Municipal Airport—renamed Sacramento Executive Airport and reorganized to serve the general aviation market.

The County secured its other two airports from the military. In 1947, it acquired Franklin Field, which was used for bomber training during World War II. In 1988, the U.S. Air Force announced its intention to close Mather Field, a training facility located in Rancho Cordova (east of downtown Sacramento). Mather reopened as a civilian airport in 1995. Most of the all-cargo carriers quickly relocated from SMF to the new facility, including Airborne Express and United Parcel Service. Mather offers cargo carriers one of the longest runways (11,000 ft.) in the country, greater apron space than SMF, proximity to Interstate 50, and land for developing independent mail sorting and other facilities.

Airport Governance and Planning: Sacramento County owns and operates all four of the region's airports. The Airport System is operated by the Sacramento County Department of Airports. The Sacramento County Board of Supervisors is the final policy-making authority on all issues affecting the airports. In October 2001 the Board passed a resolution that makes explicit the role, activities and market niche of each airport in the system.[44] These defined roles are consistent with an integrated Airport System Plan that responds to the needs of the regional economy. Policies and master plans for each airport have been developed that are consistent with these roles. The Board consists of five members, elected to non-concurrent four-year terms by the voters of Sacramento County. County elections are non-partisan, and county districts are allocated on a population basis (redistricting occurs following each decennial census). The Board appoints a County Executive, who serves as the chief executive officer of the county. The County Executive supervises the Director of Airports and other county personnel.

The County is responsible for airport system master planning. The Board of Supervisors must give its approval to all budget requests and airport master plans. The Board's small size, the county-wide reach of its constituency and use of district elections ensure that the planning process will be sensitive to the concerns of even small groups of vocal residents. So while the Board ultimately approved the Mather Airport Master Plan by a unanimous vote, it is possible for just one or two Supervisors to delay the process.

In February 2004, the County completed the first master planning process for SMF in 25 years. The Master Plan outlined an ambitious modernization program. County officials expect to replace the older of SMF's two passenger terminals with a brand new building.

The Master Plan calls for $97 million in short-term capital improvements, including projects to extend one of the two existing runways to 11,000 ft. and land acquisition for an 8,000 ft. third runway. There are plans for a new people mover to connect the concourse to the terminal and a new baggage handling system. All told, airport officials hope to make $1.6 billion in capital improvements by 2025.[45]

Mather Airport also has a new Master Plan. The Plan calls for upgrading facilities to make the airport more attractive to all-cargo carriers. Favored projects include runway improvements, adding freight warehouse space and fuel storage facilities, and improving roadways around the airport. These upgrades will be necessary if Mather is to become a regional cargo hub.[46] Mather's location, however, makes adding businesses and increasing traffic more controversial than at SMF. The final approach to Mather's main runway passes over nearby Folsom, a suburban community with upscale homes. Folsom residents have complained about the noise from incoming cargo flights. These complaints led planners to scale back plans for extending Mather's second runway. Intended to serve as a backup in case repairs or weather prevent use of the main runway, the second runway will be capped at 7,200 ft., long enough for cargo planes to land, but shorter than the 8,500 ft. that airport officials originally proposed.[47]

To address environmental concerns, the County recently formed a Mather Airport Overflight Noise Group to recommend measures to reduce the facility's impact on surrounding communities. Some of the recommendations include changing the direction and height of approaching and departing flights, and delaying the extension of flaps and landing gear.[48] These measures have not quieted community concerns. In 2004, the City of Folsom hired an attorney to press their claims with the County. So far, residents have refrained from taking legal action; however, this remains a possibility. The mayor of Folsom is on record opposing any attempts to bring new business to Mather Airport.[49]

In crafting the latest master plans for SMF and Mather, the County Board actively sought community feedback on airport alternatives. Public workshops with displays of alternative SMF plans were held in 2003. The Board also heard from residents during its own public meetings. The final Master Plan shows sensitivity to both cost and noise concerns. The capital improvement program for SMF, while ambitious, will be phased in over a 10- to 20-year period. Airport officials rejected an eastern alternative for the third

runway due to concerns over the cost of purchasing land from developers planning an office park there.[50] And the Board postponed a final vote on the Mather plan until concerns over extending the second runway could be addressed in the final draft.[51]

Ground Access and Planning: In terms of governance, transportation planning in the Sacramento region is decidedly more decentralized than is airport master planning. Planning responsibilities are dispersed among several bus and light rail operators. The Yolo County Transportation District (Yolobus) currently offers the only form of public transit to SMF. Buses run from Davis and Woodland into downtown Sacramento and to the airport on an hourly basis. Yolobus is controlled by a seven-member Board of Directors, composed of mayors and council members from Yolo County communities. The District contracts with an Ohio-based private firm to run the bus service. With recent service problems, Yolobus officials have considered operating the buses in house or merging with the Sacramento Regional Transit District (RT).[52]

Sacramento RT is the major transportation provider in the region, but offers no scheduled service to SMF. RT operates a fleet of buses as well as a light rail system in Sacramento and surrounding communities. Unlike SMF, Sacramento RT is not a County agency. It is an independent authority (created by the state legislature in 1971) that draws political support from multiple jurisdictions: the County, City of Sacramento and surrounding communities. Each of these jurisdictions appoints members to the RT Board of Directors. The County appoints three members, the City four, and surrounding suburbs four. Despite active participation by the County Supervisors, the political makeup of the RT Board differs considerably from that of the County Board. This may be one reason why RT offers no airport service, despite repeated calls for it to do so. Sacramento RT has a transit plan that lists desired capital improvement projects to 2008. These include connecting the light rail system from downtown to Folsom (recently completed), but no planned rail link to the airport.[53]

The Sacramento Area Council of Governments (SACOG) also undertakes transportation planning. SACOG has become well-known for its Blueprint Project, a transportation and land use study that won the National Award for Smart Growth Achievement by the Environmental Protection Agency in 2004.[54] The MPO has been an aggressive voice on regional transportation issues, including transit access to SMF. Indeed, SACOG's

growing success led suburban communities to press for greater influence on SACOG's largely county-dominated 19-member Board of Directors.[55] Today, SACOG is run by a 33-member Board of Directors. Each member community and county receives a single vote. Sacramento County gets two additional seats; the City of Sacramento gets one more seat. This means that the smallest community in the six-county area has nearly as much input as the largest. The growing influence of suburban communities is reflected in the Blueprint Project, which places a high priority on environmental issues.

SACOG's demographic forecast has the region adding more than 800,000 residents by 2027.[56] To accommodate this growth, substantial investments in regional transportation infrastructure will be needed. In 2000, SACOG published a white paper on airport ground access.[57] It called upon Sacramento RT to push forward with plans for a rail link to SMF. SACOG, however, lacks the capacity to implement its plans and must rely on local governments and operators to follow its lead. SACOG is able to prioritize certain projects for federal transportation funds, but its ability to enforce cooperation is decidedly limited. So, while plans for a rail link from downtown Sacramento to the airport have been in the works since the early 1990s, the project remains in the planning phases.

Lessons for the SCAG Region

(a) Opportunity-Driven Planning and Investment: Sacramento's approach to airport system master planning has been proactive, emphasizing long-term benefits over short-term costs. This approach is exemplified by SMF, which was located on a large plot of agricultural land away from existing urbanized areas. The original plans for this airport, considered overly ambitious by critics, have been vindicated by the airport's growth and success. County officials also have responded aggressively to opportunities presented by base closures, and developments in the airline industry and regional economy. The conversion of Mather Airport from a military base to a major all-cargo facility within three years was a good example of forward-looking public leadership and planning. The County covered the facility's financial losses in the first few years of operation with landing and rental fees at the other airports. This allowed time for airport officials to market Mather to cargo carriers and other prospective tenants.[58]

Moreover, County officials have maintained prudence in expanding the airport and investing in new infrastructure. The Board of Supervisors has sought a delicate balance

between indulging grandiose visions and genuflecting before current fiscal realities. Recent research on airport infrastructure suggests that a modest, opportunity-driven investment approach is a cogent model.[59] Such an approach guards against overspending the public's limited resources. So while the latest SMF Master Plan proposes an ambitious capital improvements program, many of the investments are phased in and can be altered if regional economic trends change.

(b) Identifying Key Challenges: The Sacramento case also demonstrates the need for public officials to identify key project challenges, and to weigh long-term benefits versus short-term costs. The main threats facing Mather Airport are not economic, but political. Noise concerns from the all-cargo facility have put its future use and expansion in doubt. The success of airport opponents in capping the second runway is a reminder that small, vocal minorities can often prevail over large, disorganized majorities. This is especially true, as in Mather's case, where the benefits of the public facility are widely dispersed. The County-led master planning process allows Mather's opponents many access points. Should the political process fail to accommodate their concerns, angry residents have legal strategies available to them. The current institutional arrangements allow airport officials to neither repudiate Mather's opponents nor fully accommodate their increasingly strident requests.

The challenges facing SMF, on the other hand, appear to be fiscal, rather than political. The Master Plan identifies improvements in airport facilities that will accommodate the anticipated growth in air transport demand. County officials successfully shepherded through the initiative process an ambitious development proposal for land around the airport. However, both the rail link to the airport and development of the airport's north side have been put on hold due to the inability to marshal fiscal resources to build the necessary infrastructure. Similarly, the Board rejected a proposal to build a third runway on SMF's east side out of fears that the necessary land would be more expensive. Each of these events has the potential to stall development of the regional economy around the airport. They highlight the dangers of allowing short-term costs to drive the region's transportation planning process.

(c) Governance Matters: The inability to provide meaningful public transportation to SMF is a failure for the region, not just the Sacramento RT. Part of the

explanation lies in the decentralized organization and governance of the public transportation system. Whether ground transportation planning is concentrated in a single provider or dispersed among several small operators beholden to local concerns can be a decisive factor in securing reasonable transit access to the airports. One Yolo County official called the current arrangement "more like a hostage exchange than it is an integrated transit system."[60] Were Yolobus and Sacramento RT to consummate their proposed merger, the region's transit system might acquire a decidedly different aspect.

The evolution of SACOG shows that regional governance receives greater scrutiny as MPOs acquire resources or reputations for effectiveness. For years, assignment to SACOG's Board was a chore to be avoided for Sacramento's elected officials. Suburban communities regarded their MPO with suspicion. Once SACOG had built up a capacity and reputation for thoughtful transportation planning, communities began to pay attention. Suburban members immediately pressed SACOG for a greater say over regional initiatives. These demands were difficult to resist. The current composition of SACOG's Board is different from the Board that drafted the transit access study. It remains to be seen whether the new Board will attack airport ground access planning with the same verve with which it has pursued smart growth.

(3) Dallas/Fort Worth Region

The Airport System: The air transportation system for the Dallas/Fort Worth metropolitan area (2000 pop.: 5.2 million) consists of Dallas/Fort Worth International Airport (DFW)—jointly owned by the cities of Dallas and Forth Worth—and a patchwork of municipal airports. DFW, the major commercial hub for the region, is operated by an independent Airport Board. Two other airports, Alliance Airport, the fastest growing all-cargo airport in the country, and Addison Airport, one of the nation's busiest general aviation facilities, are operated by private firms. The region's other airports include reliever and general aviation facilities operated by municipal departments. The major advantages shared by these airports include proximity to a vast inter-modal transportation network and a burgeoning industrial complex.

Lacking natural waterways and direct access to a port, the Dallas-area economy has grown up around aviation technology and airport infrastructure. The region's aviation history began in 1929 with the opening of Love Field, located near downtown Dallas.

Fort Worth Meacham Airport, located five miles north of that downtown, also began commercial service in 1929. However, in 1953, its commercial passenger service was moved to Greater Southwest International Airport (later the site of DFW). Meacham currently serves as a general aviation facility. In 1982, the City of Fort Worth began construction on a new airport, Fort Worth Spinks. The facility opened in 1988 and has been used exclusively for general aviation activities. In the same year, the City also opened Alliance Airport, a joint project with Hillwood Development that has become one of the most successful planned economic developments in the country.

Development of the region's airport infrastructure has been spurred on by a decades-long competition between Dallas and Fort Worth.[61] In 1964, the federal Civil Aeronautics Board directed the two cities to cooperate in constructing what would become DFW.[62] DFW is located between the two cities on an 18,076 acre site that is larger than the island of Manhattan.[63] A 1968 airport bond covenant between the two cities created an Airport Board to govern the facility, and limited commercial service at other local airports to intrastate flights. Existing air carriers agreed to transfer their commercial flights to the new airport. But the 1968 covenant did not include Southwest Airlines, which began service in 1971 and remained at Love Field. Southwest flights from Love Field have been a contentious issue ever since—dividing policymakers in the two cites, commercial airlines serving the region, and area residents.

The corporate and general aviation markets are ably served by several other nearby airports. These include Spinks and Meacham Airports, operated by the City of Fort Worth; Redbird Airport (renamed Dallas Executive Airport in 2002), operated by the City of Dallas; Arlington Municipal Airport, operated by the City of Arlington; and Addison Airport, owned by the Town of Addison and operated by Washington-Staubach. Each of these facilities actively competes for corporate customers in the Dallas/Fort Worth area, and helps share general aviation traffic with Alliance, Love Field and DFW airports.

DFW officially opened in January 1974. Even before its opening, the DFW Airport Board began a series of legal fights to prevent Love Field from challenging its role as the sole provider of commercial air service outside the state. In 1972, the Board sued Southwest after the airline decided to remain at Love Field. This and subsequent suits placed the City of Dallas on both sides of the conflict. Dallas controls a majority of seats on DFW's

Board, but also owns and operates Love Field. In 1979, Congress passed the Wright Amendment to the International Air Transportation Competition Act. This permitted a limited number of interstate flights from Love Field to states neighboring Texas, but also limited future flights at the facility. In 1979, Southwest launched interstate service from Love Field to New Orleans.

The Dallas City Council initially supported efforts to limit flights at Love Field, but in 1992 voted to reconsider its support for the Wright Amendment. In 1997, new federal legislation expanded the number of permissible flights to cities outside Texas. Several carriers then began offering service from Love Field to Chicago, Cleveland and Los Angeles. In response, the City of Fort Worth and American Airlines sued to prevent erosion of the Wright Amendment restrictions. Dallas then sued Fort Worth and the federal Department of Transportation. These legal fights stretched into 2000, when the Supreme Court refused to revisit a decision by the U.S. 5th Circuit Court of Appeals that allowed the new Love Field interstate flights to continue.

Airport Governance and Planning: The 5th Circuit court decision prompted the Dallas City Council to start a new master planning process for Love Field.[64] The City formed a Master Plan Advisory Committee—composed of local residents, businesses, airport tenants, airlines and others affected by the facility—and hosted a series of public meetings in late 2000. Nearby residents were represented by the Citizens Action Committee, a group formed in 1980 to voice concerns about noise from the airport. In 2001, the Council endorsed a plan that capped at 32 the number of gates at Love Field. Currently 15 gates are being used. While there are adequate facilities for increasing the number of flights, capacity is capped long-term. The plan sought $147 million in capital improvements, including a new cargo building, commercial vehicle lot, pedestrian walkway, ticketing and baggage claim facilities, and East Concourse demolition.[65]

The protracted legal fight between Dallas and Fort Worth has impacted the master planning process at DFW as well. In 1997, DFW developed an Airport Development Plan Update that called for doubling gate capacity and increasing air cargo capacity by 110 percent.[66] The Plan calls for $5.5 billion in improvements phased in over 20 years. Projects approved for the initial phase include a $1 billion international terminal and a $741 million people mover. The $2.5 billion package was approved reluctantly by the

Dallas City Council in 1999, which does not want new revenue bonds to extend the life of the original 1968 agreement.[67] Cost overruns added nearly $500 million to the initial phase's price tag, with the second phase delayed by the sagging fortunes of DFW's main carrier, American.[68]

While final approval of airport master planning lies with the City Councils of Dallas and Fort Worth, airport master planning is supervised and controlled by DFW's Airport Board. The 11-member Board hires the CEO and the executive staff. Members of the Board are appointed to four-year terms, with no member able to serve more than two consecutive terms. Seven members are appointed by the Dallas City Council, and four by Fort Worth's City Council. In 2001, the Board created a 12th non-voting position to be rotated annually among four neighboring communities.[69]

The role of DFW's Board in the Love Field battles suggests that it is not a mere surrogate for the Dallas City Council appointing authority. Indeed, the Board's activities are often greeted with greater enthusiasm in Fort Worth than in Dallas, which nominally controls a majority of the Board members. The Board continues its bare-knuckles pursuit of flight restrictions, encouraging residents living around Love Field to oppose expansion. The Board also has not wavered in its support of an ambitious capital improvements program, despite doubts raised by members of the Dallas City Council following the economic downturn after September 11, 2001.[70] The inability to mold the Board has much to do with Dallas's internal political divisions. The City Council is divided along racial and ethnic lines, and diversity concerns have animated recent appointments to the Board.[71] The Airport Board's independence also may be due to the weak executive powers of city government. Both cities have the council-manager form of government, where a "weak" mayor lacks veto power and has no budget authority. While both mayors sit on the Airport Board, the other members are appointed by their respective city councils to fixed terms.

Ground Access and Planning: Like the airport system, ground transportation planning in the Dallas/Fort Worth area has been shaped by the rivalry between the two major cities. The two cities have separate transportation service providers. However, they cooperate in providing a rail service, the Trinity Railway Express (TRE), which connects the Dallas and Fort Worth downtown areas, and DFW. The City of Fort Worth created

the Fort Worth Regional Transportation Authority (known as the T), which is run by a nine-member Board of Directors. The eight district-elected members of the City Council (all but the Mayor) each appoint one member while the ninth member is appointed by the Tarrant County Commissioners. In addition to collaborating on the TRE, the T runs over 30 bus routes. Recent budget shortfalls have led to service cutbacks.[72]

The City of Dallas participates in the Dallas Area Rapid Transit (DART) system that includes 13 other cities in a service area of 700 square miles. DART is significantly larger than the T, running a substantial rail system apart from the TRE, and bus service in Dallas and suburban locations.[73] DART has a $300 million annual budget, mostly financed by a one-percent sales tax. DART is run by a 15-member board, appointed by member cities (eight by Dallas, the rest by the suburbs) to two-year terms. The DART system also has experienced recent budget shortfalls, forcing cutbacks and delays in new services. Delays include extending the completion date (to 2014) for a separate rail extension to DFW from areas not currently served by the TRE. DART provides bus service to DFW, Love Field and Addison Airport.[74]

Plans for connecting Love Field to the downtown business district and DFW by rail have failed to garner federal funding because of a too-low projected dollars-per-passenger figure. DART will instead opt for a light rail line to run beside Love Field with a people mover connection to airport terminals. As such, plans for a single rail line linking DFW and Love Field are unlikely to be realized in the foreseeable future. It is important to note that the single rail plan was devised by DART, not by DFW or Love Field. There is little indication of airport cooperation in the plan. Given the overt hostility between the airports, the rail line linking the two is likely to be perceived as a threat. DFW officials continue to worry that greater access to Love Field will only siphon off DFW customers.[75]

More recently, area transportation planners have been working to secure cooperation on an ambitious regional transit plan. The effort is led by the Regional Transportation Council (RTC) of the North Central Texas Council of Governments (NCTCOG). RTC's recent *Regional Rail Corridor Study* found that a majority of residents favored creating a regional authority to link the area's different rail systems.[76] Notwithstanding the fate of DART's single rail plan, NCTCOG has prioritized projects that would connect DFW and Love Field with hotels and convention centers via a single rail line. In the proposal

stage, the so-called "Wayport" concept also would enable passengers arriving at one airport to easily reach connecting flights at the other. The planning agency is also seeking $100 million in state mobility funds for this purpose. The regional transportation plan also reserves $100 million in federal highway money for toll-road projects on freeways around the airports. In devising its projects, RTC officials worked closely with officials at the T, DART and DFW. However, there is no indication of airport support or participation in the "Wayport" concept.[77]

Lessons for the SCAG Region

(a) Intra-regional Competition and Cooperation: The experience of the Dallas/Fort Worth Metroplex highlights both the advantages and disadvantages of intra-regional competition. It was competition between the two cities that resulted in the development of substantial airport infrastructure, including a world-class cargo facility in Fort Worth and general aviation facilities in Dallas, Fort Worth and other communities. Competition between carriers at DFW and Love Field has undoubtedly kept prices low and provided new air transportation options for customers in the region. Unfortunately, competition has also spawned a nasty legal fight, which appears to be more about the market shares of competing airlines than providing new and better air transport options for the region. Moreover, the prolonged legal struggle has made the already difficult process of achieving consensus on airport master planning issues more divisive. The position of the DFW management team, which serves multiple masters, seems particularly difficult.

Federally mandated or not, cooperation between the cities of Dallas and Fort Worth has resulted in one of the world's most successful airports. DFW is the primary economic engine for the region, generating $11 billion in annual economic activity and 211,000 local jobs. Cooperation between the two cities resulted in regular rail service connecting both downtown areas with DFW. The efforts of NCTCOG, the main forum for regional collaboration, helped build one of the most extensive highway systems in the country. They are the backbone of the region's inter-modal transportation network. Seamless air, rail, and trucking connections make the Dallas/Fort Worth Metroplex an economic powerhouse, one of the largest inland ports in the nation.

(b) Federal Involvement: Unlike many airport facilities, the design and operation of DFW has been shaped by the activities of federal agencies and legislators. A federal mandate was required to get the City of Dallas to the negotiating table for a new regional airport in the 1960s. The FAA told both cities to agree on a new site within 180 days or the federal government would do it for them. Prior to the mandate, political officials in the two cities were in a difficult position. The City of Dallas had invested in Love Field, which generated large economic gains for the city. Continued expansion of Love Field, however, was becoming prohibitively expensive. City officials in Fort Worth, on the other hand, had a large, convenient site for a new hub airport, but lacked the resources to develop it and faced stiff competition from Love Field. The federal mandate gave political cover in Dallas and brought needed resources for DFW's development.

However, federal participation in local airport infrastructure debates since the 1968 agreement has been less focused on regional efficiency and more on local politics. Indeed, although both cities agreed to the covenant, nothing prevents either city from pursuing legislation that would alter its original terms. Specifically, the flight limits from Love Field can be strengthened or relaxed by federal legislation. Both sides of the Love Field dispute have found willing sponsors in Congress. However, while the FAA was motivated by the desire to avoid duplication of resources within the entire Dallas/Fort Worth region, members of Congress need only curry favor with voters in their local constituencies. The economic efficiency concerns that motivated initial cooperation have been replaced by distributional concerns. Whether flight restrictions at Love Field are a net benefit to the regional economy or not seems beside the point in the continuing political dispute over the Wright Amendment.[78]

(c) Airport Rail Access Planning: Of relevance to the SCAG Region is the apparent defeat of DART's single rail line plan linking the two major airports, and the North Central Texas Council of Government's (NCTCOG) current efforts at prioritizing and seeking funding for rail projects that connect DFW Airport and Love Field via a single rail line. This "Wayport" concept would enable passengers arriving at one airport to conveniently access connecting flights at the other airport. While the NCTCOG works closely with airport officials and with officials of the region's various transportation agencies, it is unclear whether there is airport interest and involvement in the concept,

particularly by DFW. It also remains to be seen if public support to better link the area's different rail systems will result in a new regional rail authority.

(d) Incentivizing Public-Private Partnerships: The growth of the industrial complex around DFW and Alliance Airport reflects the success of a different form of collaboration. The burgeoning air cargo business at Alliance is the fruit of $164 million in local, state and federal funding, and $1.2 billion in private-sector investments. Part of Alliance's growth can be attributed to its location vis-à-vis rail, truck and airport infrastructure. This was the result of careful planning by the City of Fort Worth and its private-sector partner, Hillwood Development. Planners left ample room for rail and highway hook-ups, and on-site cargo handling facilities. Just as important, however, are the economic incentives provided by local and state government. In addition to public funding for runway improvement and other projects, Alliance Airport has been designated a foreign trade zone. This has a variety of advantages for manufacturers, including the ability to delay tax payments until final sale of imported products, the option to pay taxes on finished products or their component raw materials, and exemption from local property and sales taxes. Alliance also has a "freeport" tax exemption. Businesses do not pay local property taxes on inventory leaving the state within 175 days.[79]

(4) Washington/Baltimore Region

The Airport System: The Greater Washington D.C. area (2000 pop.: 7.6 million) is supported by three major hub airports: Baltimore/Washington International Airport (BWI), Ronald Reagan Washington National Airport (National or DCA), and Dulles International Airport (Dulles or IAD). BWI Airport is part of the multi-airport system serving the metropolitan area, although in another state and under different governance than National and Dulles airports.[80] BWI is a Southwest hub and an increasingly utilized core airport, drawing passengers from across the mid-Atlantic region.

In 2004, Dulles served 22.6 million passengers (a 35 percent increase over 2003), while National served 15.9 million (12 percent increase) and BWI 20.8 million passengers, respectively. Dulles was also the leader in air cargo, handling over 300,000 metric tons, compared to 250,000 tons for BWI and only 5,000 tons for National. Developed by the federal government, Dulles languished for years because of federal service restrictions and its then-remote location. As urbanization proceeded toward Dulles, air traffic began

picking up. In terms of Dulles's recent growth, Independence Air began operations in 2004 as a regional low-fare airline, adding nearly 600 daily flights, while United Airlines continued its United Express operation using new regional partners.[81]

Airport Governance and Planning: The Metropolitan Washington Airport Authority (Authority or MWAA), created by federal law in 1986, operates, maintains, improves, promotes, and protects National and Dulles airports through a 50-year lease. The federal government retains ownership of both airports.[82] The Authority is constituted only to operate and improve the Metropolitan Washington Airports as primary airports serving the Metropolitan Washington area and is authorized to exercise the powers of eminent domain in Virginia.[83] The Authority is governed by a Board of Directors composed of thirteen members. Five are appointed by the Governor of Virginia; three by the Mayor of the District of Columbia with the advice and consent of the City Council; two are appointed by the Governor of Maryland; and three are appointed by the U.S. President with the advice and consent of the Senate.[84] Not more than two of the members of the board appointed by the President may be of the same political party.[85] The chairman of the board is appointed from among the members by majority vote and serves six years.

In addition to operating National and Dulles airports, the Authority is responsible for capital improvements at both airports. Major renovations at National Airport resulted in the opening of a new terminal in 1997 and more efficient passenger facilities that offer convenient access to the Metrorail system and parking garages. The Authority is not taxpayer-funded but is self-supporting, using aircraft landing fees, rents and revenues from concessions to fund operating expenses. The Dulles Development Program is funded by bonds issued by the Authority, Federal and State Airport Improvement Program funds, and Passenger Facility Charges.

The State of Maryland owns and operates Baltimore/Washington International Airport through the Maryland Aviation Administration (MAA), which is part of the Maryland Department of Transportation (MDOT). The Maryland Aviation Commission (MAC), a gubernatorial advisory panel created in 1994, establishes policies to improve and promote BWI as an airport of service to the Washington-Baltimore metropolitan area. The Governor, with the consent of the state Senate, appoints eight members to the MAC, while the Secretary of the Maryland Department of Transportation is the ninth

member and serves as MAC chair.[86] A nine member airport governance study group has been appointed by the Maryland State Secretary of Transportation to evaluate how the state-owned BWI is governed and to make recommendations in September 2005 about its governance structure and bonding capacity.[87] Currently, the MAA is not permitted to finance its own debt to take on new projects. A policy change requires state legislation.[88]

Ground Access and Planning: The Washington Metropolitan Area Transit Authority (WMATA) is responsible for coordination of ground access at both National and Dulles airports. Local transit service providers depend on WMATA to provide regional connectivity.[89] In 2002, WMATA accommodated a combined total of 328.7 million bus and rail trips in the National Capital Region (NCR).[90] WMATA operates and maintains the local rail system and provides limited bus service to National. An Airports Advisory Committee advises the Board of the Metropolitan Washington Airports Authority on issues directly affecting the residents of the Metro Washington region resulting from air traffic from National and Dulles airports. Meetings are scheduled regularly. The advisory committee consists of twenty members: six appointed by the Mayor; ten from the Commonwealth of Virginia; and four from the State of Maryland.

For BWI Airport, the Maryland Aviation Administration is the lead agency in planning and coordinating intermodal facilities with federal and state agencies, local governments, and private and public stakeholders. Through BWI's Access Coordination Group, the MDOT and MAA conduct intermodal planning and coordination at the state level among state transportation agencies. A Washington Airports Task Force has been assembled to address ground access issues at BWI. Further, a board member of the Maryland Aviation Commission sits on the State of Maryland Governor's Transportation Task Force, established to evaluate funding options for transportation.

The following transit services are currently available at the region's hub airports: (a) for BWI, local bus and local and nationwide rail connections; (b) for National, local rail and bus service; and (c) for Dulles, local bus service, indirect rail service, and nationwide bus connections. At BWI, an airport shuttle to the local rail station runs approximately every ten to fifteen minutes and takes about five minutes.[91] Specifically, BWI passengers have access to three local rail transit systems: Red Line Howard Transit, MARC Train, and

Washington MetroRail. A station for Baltimore's local rail transit system is located at the airport terminal. MARC runs twenty trains per day out of BWI. A local commuter rail stops at an Amtrak station two miles from the terminal and is accessible by free shuttle bus. Amtrak service offers sixty trains per day out of BWI. A station for Washington, D.C.'s local rail transit system, MetroRail, can be accessed by an express bus from the BWI terminal. Maryland Transit Administration (MTA) Maryland provides local bus service to and from the airport with service from a bus stop at the BWI terminal every thirty to forty minutes. Shuttles are offered as well, with service every 10-15 minutes.

For National Airport, a local rail transit station is adjacent to the main terminal, accessible by an elevated crosswalk, while a free shuttle provides access from the other terminal. Local bus service is provided at both terminals. The Washington Metropolitan Area Transit Commission regulates and allows the operation of airport shuttles. At Dulles, local bus service is provided by WMATA and passengers can take a shuttle to access the local rail system for a fee. From Dulles, Greyhound provides bus service to parts of Virginia and connections are available to New York. A Dulles shuttle bus runs from the airport to the local transit rail station every half hour and takes 20 minutes.

As for future airport ground access improvements, a regional intermodal transportation center and an automated people mover system that connects BWI to the Amtrak rail station are under evaluation by the Maryland Aviation Administration. At National, there are no plans at this time for additional ground transportation facilities.[92] At Dulles, a major local rail project is underway. The $1 billion project features construction of underground stations and tunnels to accommodate the new Airport Train System, which will operate beneath the airfield and replace the Mobile Lounges[93] as the primary passenger conveyance system at the airport. An Automated People Mover (APM) train system will connect the Main Terminal at Dulles Airport with Concourses A, B and C and will reduce walking distances. It is expected that in this first phase, the system will serve 6,550 passengers per hour per direction. The airport train system is scheduled to begin service by late 2008. WMATA acts as consultant to the Commonwealth of Virginia's Department of Transportation in the Dulles Rail Project, which has a projected completion date of 2010 (and airport station in 2015). The Virginia Department of Rail and Public Transportation is the project leader for the local rail extension and coordinates with the airport, the Washington Metropolitan COG (the regional

transportation planning body), Fairfax and Loudoun Counties, and the federal transportation agencies.[94]

The Metropolitan Washington Council of Governments (COG) is an independent agency and regional organization of governments that develops regional programs to resolve issues of traffic congestion, including airport traffic. The COG represents nineteen local governments,[95] plus area members of the Maryland and Virginia legislatures, the U.S. Senate and the U.S. House of Representatives. It is governed by a thirty-one member Board of Directors (appointed each year by participating local governments and by the state legislative delegations from the region); conducts regional planning for National Airport; and is a ground access stakeholder. The Board meets monthly to discuss issues of regional importance. From time to time COG is involved in airport planning and related issues such as noise control, but is not involved in ground access issues.[96]

The National Capital Region Transportation Planning Board (TPB)[97] is the federally designated Metropolitan Planning Organization (MPO) for the region,[98] and plays an important role as the regional forum for transportation planning. The TPB's planning area includes the District of Columbia and neighboring counties and cities in Maryland and Virginia.[99] Members include representatives of local governments, state transportation agencies, the Maryland and Virginia General Assemblies, WMATA, and non-voting members from the Metropolitan Washington Airports Authority and federal agencies. The TPB does not exercise direct control over funding and does not implement projects, but it does perform a range of activities that promote an integrated approach to transportation development through its basic role as a coordinating agency. For example, it has produced the *Vision* policy document that lays out eight broad goals to guide the region's transportation investments into the 21st century, and which incorporated an extensive public outreach effort that lasted three years.

In order to ensure that the Washington metropolitan area's transportation system provides sufficient breadth of access at reasonable cost, TPB's strategies include planning, implementing, and maintaining a truly integrated, multi-modal regional transportation system and adopting a regional transit planning process and plan, with priority to uniformity, connectivity, equity, cost effectiveness and reasonable fares.[100] Established goals include implementation of a regional congestion management

program, including coordinated regional bus service, traffic operations improvements, transit, ridesharing, telecommuting incentives, and pricing strategies. Region-wide coordination of land use and transportation planning is in accordance with the recommendations of the Partnership for Regional Excellence report approved in 1993 by the Metro Washington COG Board of Directors.

The TPB promotes regional coordination through seeking input in a participatory public process and establishing goals and strategies for the region. In striving for better inter-jurisdictional coordination of transportation and land use planning, TPB has developed Regional Activity Center maps that identify the key elements needed for regional transportation planning, such as principal transportation corridors and facilities. Other strategies include developing a regional process to formally notify local governments of regional growth and transportation policy issues, encouraging local governments to specifically address such issues in their comprehensive plans, and identifying an agreed-upon set of definitions and assumptions to facilitate regional cooperation.

A stated TPB regional goal is to enhance connectivity to and between Dulles, National, and BWI airports and to develop a regional plan for freight movement. However, no entity appears to be planning high speed rail connections between the three airports. The airports cannot support rail systems by themselves, and local transportation agencies and airport authorities themselves see little value in connecting the airports. The Maryland DOT agency focuses on BWI/Metropolitan Baltimore rail linkages. There is little planning cooperation between Maryland airport and transportation agencies and their Washington D.C. counterparts.[101]

While the Metro Washington COG and the TPB are legally separate, they enjoy a close working relationship. They have a combined joint budget. TPB serves in a policy advising role to COG in terms of transportation issues. TPB does not have its own staff, but is staffed by the COG. Legally, the two boards are separate. TPB does not sit on the COG board, and vice versa. COG has 19 local government members and TPB has 22 members plus the two states. The COG and TPB have tried over the years to do or coordinate airport planning in the region, but have been unsuccessful. A key reason that planning is weak in the region is because there are three jurisdictions, not to mention the

federal government. Multiple, competing jurisdictions in a very complex political environment have stymied effective regional aviation planning.[102]

Lessons for the SCAG Region

(a) Ground Access Provision and Coordination: The Washington-Baltimore region provides multi-modal transportation services linking the major airport hubs with major employment centers and residential destinations in the region.[103] In 1977, Metrorail service began to National. In 1980, BWI became the first airport in the U.S. to have a rail station on airport grounds. In 1990, I-195 opened, connecting BWI directly to I-95, greatly improving access from both the Washington and Baltimore areas. In 1995, SuperShuttle initiated ground transportation service to Baltimore, Annapolis, and Washington, D.C. In 1997, a new international terminal debuted at BWI featuring light rail service. Rail service is being planned to Dulles airport. Yet, there appears to be little interest in linking the region's airports together with rail service. While the TPB has a top goal of enhancing connections among the three major hubs, there has been no further progress. Multiple, competing airport and transportation agencies in a complex multi-jurisdictional environment make coordination and cooperation difficult.

(b) International Cargo Marketing: Recognizing the critical need for government support of the air freight industry and the potential for all cargo airports as a serious alternative to conventional airports,[104] the Metropolitan Washington Airports Authority (MWAA) actively participates in international efforts to market air cargo services for the region.[105] Activities include distributing promotional publications, participating in international air freight and cargo forums, conferences and exhibitions, commissioning cargo marketing and development studies, and designing marketing programs to target potential airport users based upon market trends. MWAA has established an International Cargo Airport Alliance ("Galaxy Alliance"), the first step toward a worldwide organization of airports to promote and develop their air cargo and logistics business.[106] These strategies may be valuable for adoption by SCAG region outlying airports in ramping up their air cargo operations.

(5) The Southern California Regional Airport Authority (SCRAA)

Our last exemplar is the now-dormant Southern California Regional Airport Authority (SCRAA). From 1985 to 2003, this multi-jurisdictional joint powers authority (JPA)

served as a potential vehicle for airport regionalization and decentralization and, more recently, for a proposed high speed rail system linking urban areas with outlying Inland Empire airports. Here we consider SCRAA's genesis and development; its mission, powers, and membership; and its relation to SCAG. We conclude with the Authority's lessons for the "Airport Consortium" concept.

Genesis and Development: SCRAA was the brainchild of the late Clifton Moore, Executive Director of Los Angeles's Department of Airports, 1968-1992. By the late 1960s, Moore had become a strong advocate of airport regionalization, realizing that future LAX expansion prospects were limited by growing community opposition and that new airport capacity was needed in outlying areas. To further regionalization, the L.A. Department of Airports (LADOA, later renamed Los Angeles World Airports) acquired Ontario and Palmdale airports as reliever facilities. At the urging of Executive Director Moore, LADOA in 1976 proposed the creation of a regional airport authority to "appropriately accommodate regional aviation demand." Participation would be voluntary for existing airports; each facility could determine its own level of participation. This would assure a mutually agreeable system of local control and financial burden sharing. However, the L.A. City Council did not back the initiative, and many independent airport operators were resistant and fearful of the political power of the City of Los Angeles.[107]

In 1981, the initiative was recast as an exploratory joint powers agreement (under the California Government Code, sections 6500 *et. seq*.) between the Counties of Los Angeles, Riverside, San Bernardino, and the City of Los Angeles. The County of Orange declined membership. The participants came together to explore the feasibility of creating a regional airport authority because there was no single public agency that had the legal authority and requisite capability to adequately meet the region's future aviation demand. In 1985, a superceding joint powers agreement between the four governmental jurisdictions was signed, officially creating the Southern California Regional Airport Authority with the mission, powers, and duties described below. The Authority is a public entity separate from the parties to the Agreement. In recognition of his founding role, Cliff Moore was named SCRAA's Chief Executive Officer and Secretary.[108]

From 1985 to 1992, SCRAA primarily focused upon planning and served as an informational forum. The Authority completed several regional airport feasibility and market share allocation studies, and developed marketing approaches for the region's airport system. SCRAA also sponsored several SCAG regional aviation planning projects. During these years, there was little controversy over airport issues in the region. In 1992, Orange County finally joined SCRAA, but on the condition that each member had contractual veto power over the authority's decisions.

Soon thereafter, as airport battles featuring the LAX Master Plan and a proposed commercial airport at El Toro in Orange County heated up, there were airport development conflicts between the SCRAA members, and the organization became inactive. In 2001, it was revived by L.A. County officials seeking to shift future regional aviation demand from LAX to outlying airports. After Orange County voters in March 2002 rejected a commercial airport at El Toro (Measure W), SCRAA became an advocate of a proposed "airport without runways" high speed rail system to run from Anaheim to Inland Empire airports and ultimately to Las Vegas. But by 2004, as Orange and Riverside Counties withdrew because of airport development conflicts, and the City of Los Angeles failed to send a representative (ostensibly because of L.A. County's use of SCRAA to oppose the LAX Master Plan), SCRAA became dormant again for lack of a quorum.[109]

Mission, Powers, and Membership: Since its creation, SCRAA's mission has changed. In the initial startup period, 1985-1990, the focus was upon planning to develop new airport capacity to meet future regional aviation demand. Later, SCRAA was used as a vehicle by some Board members to try to shape outcomes concerning the LAX Master Plan and the proposed El Toro airport. Most recently, after the El Toro airport defeat, SCRAA switched from airport to ground access planning. It became an advocate of "airports without runways" where proposed high speed rail systems would connect urban air travelers with uncongested suburban airports.

The 1985 SCRAA joint powers agreement describes the powers, term, membership, and funding of the Authority. The powers of SCRAA are as follows[110]:

- Develop, construct, acquire, operate, contract for, repair, transfer, maintain, manage, lease and administer general aviation and commercial air carrier airports;
- Issue revenue bonds and to incur other forms of indebtedness as necessary to further the Authority's goals;
- Acquire, hold, and dispose of property, both personal and real;
- Establish policies, rules, regulations governing the use and administration of any airport facility owned or operated by the Authority subject to the powers of the federal government regarding commerce;
- Apply for and receive state and federal grants;
- Exercise the power of eminent domain;
- Any member has the "right of disapproval" with respect to any SCRAA proposal of acquisition by the Authority of an existing airport or of a site for development of an airport.

There is no established termination date for SCRAA. It shall exist only "as long as is necessary to carry out the purpose of this Agreement… so long as a there are three or more parties… who desire to continue the purposes of this Agreement." Regarding the SCRAA Board of Directors, each party to the Agreement has one member and one alternate appointed to the Board. Board members must be selected from the County Board of Supervisors. Alternates may be appointed from the Board of Supervisors or another elected official from within the County. Ex-officio non-voting members are permitted upon unanimous approval by the Board and are subject to dues of $500 per year. SCAG is officially designated as an ex-officio non-voting member. The original agreement called for a mandatory contribution from each member of $20,000 per fiscal year during the initial "feasibility, investigation, and study period". In the early 1990s, the membership fees were drastically lowered.[111]

Two amendments were made to the original 1985 JPA. The first, approved in 1988, added non-voting associate members and empowered SCRAA to collect annual dues from members. Associate memberships were made available to local governmental entities with territory in their jurisdictions within the noise impact of an airport. The associate member had to be an elected officer of the local government entity. By majority vote, the voting members of the SCRAA Board of Directors can approve an

associate membership. The second amendment, approved in 1992, added the County of Orange as a member. Orange County reconsidered its earlier decision and finally joined SCRAA because it wanted a greater voice in regional aviation issues; desired access to legal contractual veto power over new airports within its jurisdiction; and saw SCRAA as a potential opportunity to promote the high speed rail concept to access remote airport sites.[112]

The promise of the Southern California Regional Airport Authority remained largely illusory. It was originally touted by supporters as a vehicle for airport regionalization and decentralization. Under California JPA law, SCRAA was given the powers bestowed upon its general government members: to own, acquire, construct and operate commercial airports. In theory, it also had the powers of eminent domain and revenue-bond financing. Notwithstanding the appearance of formidable power, SCRAA essentially functioned as a voluntary association comprised of the City of Los Angeles and the Counties of Los Angeles, San Bernardino, Riverside and Orange as voting members, with SCAG participating as a non-voting member. When Orange County finally joined SCRAA in 1992, it did so on the condition that each member had contractual veto power over the Authority's decisions. Veto power severely limited the agency's airport development powers. Chronically underfunded, SCRAA was reactivated by L.A. County officials as a bargaining chip to give them more say over the LAX Master Plan and provide alternatives to LAX expansion such as Palmdale.[113]

There are few incentives for today's local elected officials to create veto-free regional airport authorities, particularly in multi-airport, multi-jurisdictional settings. The combination of concentrated environmental costs (imposed on airport neighbors) and diffuse economic benefits (for the region) creates a political milieu in which no politician has incentive to risk the ire of angry local voters for promises of support from more passive and dispersed supporters who may live and vote outside the district. Also, there is the structural problem of a privileged status quo. Any existing airport operator who feels its interests threatened by a regional authority has strong incentive to demand local veto power. This may be particularly true in large metropolitan areas such as the SCAG Region with a large number of locally-run airports whose operators don't see much of a connection to other airports.[114]

Relation to SCAG: There has been a history of cooperation between SCRAA and the Southern California Association of Governments. In the 1970s, Cliff Moore used SCAG's 1972 *Southern California Regional Aviation System Study* to promote the idea that a regional aviation authority was needed for the region. After SCRAA was created in 1985, it sponsored several aviation planning projects at SCAG. For example, SCRAA provided SCAG with seed money to begin development of the Regional Airport Demand Allocation Model (RADAM) that today is used to forecast and allocate air passenger and cargo demand in the SCAG region.[115]

Immediately following SCRAA's resurrection in 2001, both SCRAA and SCAG staff saw the Authority as a potential entity to implement the decentralized airport approach considered in SCAG's draft *2001 Regional Transportation Plan*.[116] In this formulation, SCAG would be the primary regional aviation planning entity, laying the foundation for aviation service. SCAG's RTP provides the framework for future aviation-related action in the Southern California region. SCRAA could potentially serve as the RTP's implementing body since no other single organization had the ability, authority, or representation to implement a regional approach to aviation service.[117] Later, when the Authority shifted from airport to ground access issues, there was growing disagreement with SCAG. In particular, SCRAA's "airports without runways" concept, linked to a proposed California/Nevada high speed rail route, was inconsistent with SCAG's "adopted regional Maglev system" linking the Southern California airports together.

Lessons for the "Airport Consortium" Concept

(a) Ease and Flexibility of the JPA Approach: SCRAA demonstrates the apparent ease and flexibility of the JPA approach to governance under the California Government Code. A JPA is a contractual agreement between participating governmental entities. A separate entity can be created, but it can only have up to the powers that have been granted to the participating members. As SCRAA's history shows, a JPA can be a planning agency or an implementation entity, either for airport and/or ground access projects. As with SCRAA, its members can be general purpose governments. Or, a JPA could be formed among other local government entities such as airport operators (as was originally proposed for the regional airport authority).

(b) Fewer and Flexible Powers Are Preferable: In 1985 SCRAA was reconstituted by a superceding agreement, and given apparently formidable powers of eminent domain, revenue-bond financing, and airport development and operation—though subject to member vetoes. Formidable powers subject to single member veto created a dysfunctional decision-making dynamic. It encouraged obstructive behavior by some members to ensure that new airports would not be built in their bailiwick. SCRAA's powers and veto rules also could be used as threat leverage by members to limit expansion at existing urban airports.

As the region's airport debate shifts from new airport capacity to ground access to underutilized outlying airports, this may be an opportune time to reconstitute SCRAA (subject to the approval of its members) to be consistent with the Regional Airport Consortium concept in SCAG's *2004 Regional Transportation Plan*. An alternative to a reconstituted SCRAA, consistent with the airport consortium concept, would be to create another JPA in a looser, more flexible, confederation-like form. The focus needs to shift from centralized authority and command and control mechanisms to incentives for cooperation and coordination among the region's various airport and ground access agencies.

(c) Avoid Rigid Rules: If a JPA is an appropriate way to create a Regional Airport Consortium, it is important to avoid needless decision-making roadblocks and inflexible rules when crafting the agreement. SCRAA's unanimous consent rule illustrates such risks and dangers. With SCRAA, the Agreement can only be terminated or amended by the unanimous mutual written consent of the members. Thus, all five members have to agree to Board membership (including SCAG's power), SCRAA's powers and authority, member contributions and the agency's budget, and termination procedures. Thus, nothing can be changed as outlined in the Agreement without all members voting affirmative. Even withdrawals must be approved by all parties to the Agreement.

Notwithstanding the seeming withdrawal of the County of Orange and Riverside County (never unanimously approved by the SCRAA Board), and recent non-participation by the City of Los Angeles, these rules mean that SCRAA remains in existence, although inactive. The Authority's Agreement continues so long as there are three or more

parties in number to the Agreement who desire to continue with the purposes of the Agreement. Should the City of Los Angeles indicate a desire to continue and appoint a representative, SCRAA could be reactivated.[118]

(d) Mission and Membership Matter: Another lesson from SCRAA pertains to the dangers of an unclear or conflicted mission and uncommitted or limited membership. In the first rendition under CEO Cliff Moore, the Authority vacillated between serving as a planning agency and informational forum versus a more proactive role of creating a regional airport system to relieve an overcrowded LAX. When asked about having regrets about things that were not accomplished, Cliff Moore observed in 2001: "I wish that the Regional Airport Authority had been able to get further ahead than it did because while it managed to fit and begin to deal with problems, it never did once commit to a major program. That's what I was hoping to accomplish."[119] In the second rendition under CEO Peggy Ducey, the Authority's momentum was diverted by Board member involvement in battles over the LAX Master Plan and the proposed El Toro airport. The battle lines that hardened in these disputes hindered SCRAA's progress as its mission shifted to airport ground access.

A final SCRAA weakness involves representation. The City of Los Angeles had been the early driving force behind the Authority's creation. Ironically, by 2001 the City was not even willing to participate in SCRAA deliberations because of L.A. City-County conflicts over LAX expansion. The City of Los Angeles—with the region's lead airport agency, Los Angeles World Airports—is an absolutely critical participant in regional airport and ground access decision making. Finding ways to encourage the City's active engagement in the "Airport Consortium" is an essential task. By limiting membership to County supervisors (and a City of L.A. official), SCRAA was immersed in supervisorial district politics, with airports as pawn pieces. At the very least, there needed to be serious consideration of having other local jurisdictions and their elected officials serve as voting members. And what should SCAG's role be? For some, SCAG's ex-officio non-voting status was a problem. Partly in response, and with interagency rail project conflicts mounting, SCAG withdrew from SCRAA participation.[120]

APPROPRIATE STRUCTURES FOR THE AIRPORT CONSORTIUM

What are the most appropriate governance structures for implementing the "Regional Airport Consortium" concept? Selecting the right institutional arrangements will be crucial to ensure that the consortium will be an effective vehicle for implementing a broad range of SCAG regional policies. As described in SCAG's *2004 RTP Update,* these include the Preferred Aviation Plan's strategy of airport decentralization and encouraging improved ground access to suburban airports. Besides aviation and ground transportation (e.g., by ranking airport ground access projects for the RTP every three to four years), the consortium would assist with growth visioning (by promoting "smart growth" around airports and reducing or eliminating incompatible development such as homes, schools, or hospitals). It would play a go-between role between SCAG and the Airport Land Use Commissions (ALUCs) charged with developing airport comprehensive land use plans (CLUPs). The airport consortium also would help ensure that SCAG land use forecasts around airports are consistent with the CLUPs. It would help coordinate with the proposed Maglev joint powers authority (JPA). Finally, the consortium would assist in implementing the findings of SCAG's Regional Airspace Analysis by helping (in conjunction with the FAA) to better coordinate new flight procedures/paths between airports.

Our Regional Airport Governance and Ground Access Survey of the nation's 18 largest metropolitan areas and the in-depth analyses of five exemplar cases suggest many governance options are available. However, many of them are inconsistent with a multi-jurisdiction, multi-airport "airport consortium" concept. Thus, we exclude pure federal, state, county, municipal, regional or port district models of metropolitan airport governance arrangements. Based upon our Survey results, exemplar case studies, and discussions with airport and transportation officials and planners in Southern California and around the country, we believe three governance arrangements stand out in terms of their political and legal feasibility: (a) a New England-style Regional Airport Consortium memorandum of understanding (MOU); (b) a resurrected and reconstituted Southern California Regional Airport Authority (SCRAA); or (c) a new joint powers authority (JPA). In the following pages we describe these models for the airport consortium's mission, membership, and tasks; consider their respective advantages and disadvantages; and outline a process by which a preferred structure might be selected.

New England-Style MOU: The New England Regional Airport Consortium consists of a MOU between ten airports and six states to perform joint planning and marketing to encourage service at the region's secondary airports and relieve pressure at congested Logan International Airport in Boston. The Airport Consortium has a loose, confederation-like organizational structure without formal bylaws and powers. Early and active leadership and support by the Massachusetts Aeronautics Commission (MAC) and the Massachusetts Port Authority (Massport)—the operator of Logan airport—were necessary to jumpstart the MOU process. The regional FAA office and entities such as the New England Council also played key facilitating roles. The New England experience suggests that cooperation and coordination are most evident when focused upon specific projects, such as the New England Regional Airport System Plan update. Here a Project Management Team includes not only MAC, Massport, the FAA, and the Plan's consultants, but also representatives from the ten airports and six state Departments of Transportation. The Team oversees and reviews the work of the consultants, and works with the academic Peer Review Team, whose input has been critical to the Plan update. Yet to date the New England consortium and its various teams have not systematically focused upon or tackled airport ground access issues.

A similarly modeled SCAG Region Airport Consortium would consist of representatives from the ten commercial airports, from the respective county transportation commissions in Los Angeles, Orange, Riverside and San Bernardino Counties, from other relevant agencies such as the Southern California Regional Rail Authority (Metrolink) and the Southern California Association of Governments. Consideration should also be given to participation by commuter airport operators and transportation agencies in Ventura and Imperial Counties. At some point, there can even be consideration of a Mega-Region approach, incorporating all of Southern California's commercial airports and transportation agencies from Santa Barbara to San Diego County. The consortium ought to initially focus upon implementing the *2004 RTP* by identifying complementary roles and market niches between airports, and promoting consideration of ways to achieve improved ground access to underutilized suburban airports. An academic Peer Review Team, similar to the group formed in New England, might be created to provide needed input and project review.

The New England model suggests two other consortium roles. First, a SCAG Region Airport Consortium should consider launching a collaborative marketing venture, bringing the suburban passenger and cargo airports to the attention of the travel and tourist industries, and industries dependent upon air cargo shipments. Working with the region's business organizations, the new airport consortium should consider sponsoring a Fly Southern California conference, linking the airports with the airlines and their schedulers, travel agents, the tourist industry, the freight industry, and relevant industry associations. Collaborative marketing can serve the needs of constrained urban airports as well as underutilized suburban airports. The SCAG Region's urban airports share a common interest in relieving congestion. For them, the consortium should focus its marketing efforts upon flights and services that most benefit their local communities.

Second, the consortium can be a clearinghouse and interface for the region's airport operators. For example, it can share information regarding new federal and state policy mandates, and might serve as a critical coordinating interface between the region's airport system and relevant federal agencies (such as the FAA, TSA, EPA, and DOT) and their California counterparts. The consortium can also be a forum for sharing best management practices among the region's airport operators, such as how to implement air quality plans with cost-effective emission reduction strategies. Finally, it can share information on innovative financing techniques, particularly needed by the smaller airports to make necessary improvements (see Appendix III).

The chief advantages of the New England MOU approach are ease of creation and flexibility. While political feasibility thus may be enhanced, there are tradeoffs. David B. Walker argues that a lack of real powers under such agreements can result in lessened effectiveness.[121] Yet the absence of formal powers might actually reduce mistrust and encourage participation among the SCAG Region's often-feuding airport operators. Participation on projects of common interest, such as encouraging better ground access to and utilization of secondary airports, can encourage cooperation and build trust among stakeholders, setting the stage for consideration of more formal institutional arrangements and powers at a later date.

There are uncertainties and disadvantages with the MOU approach. The New England case suggests the need for the lead airport agency with the most impacted airport—in

this case Los Angeles World Airports (LAWA) and LAX—to initiate the process and play an active and continuing leadership and financial role. Other constrained urban airports in the Region also need to see the value of participation in terms of targeted marketing for local needs, relieving congestion, and addressing community concerns. Further, the New England case suggests that the MOU approach may work well for regional airport planning and collaborative marketing, but has not yet been tested as a mechanism for airport ground-access planning and projects.

It is logical that LAWA should take the lead role in establishing an MOU approach, since it already operates as a *de facto* regional airport authority for Southern California. This municipal agency run by the City of Los Angeles owns and operates the two largest airports in the SCAG Region—LAX and Ontario--that together currently handle the lion's share of the region's air passengers (78.5%) and air cargo (95.5%). A third airport that it owns and operates—Palmdale Airport—is forecast by the 2004 RTP to serve as the region's third international airport besides LAX and Ontario, all interconnected by a regional high-speed rail (Maglev) system.

The 2004 RTP calls for LAWA to develop an "Integrated Metropolitan Airport System Plan." This plan would "detail how LAX, Ontario and Palmdale will work with each other and other airports in the region (such as Southern California Logistics, San Bernardino International and March Inland Port) in efficiently meeting regional aviation demand as defined in the RTP Regional Aviation Plan." To carry out its integrated system plan LAWA would "provide needed financial support to Palmdale and Ontario airports to construct new facilities and establish long-haul and international service through attractive pricing arrangements and other inducements." It would also "broker cooperation from airlines to provide more robust flight portfolios at Palmdale and Ontario, including long-haul and international service."[122]

After completing its integrated system plan, LAWA would then develop "agreements between LAWA and non-LAWA airports....to promote further decentralization of the regional aviation system. Different roles and market niches for airports will be defined, so as to reduce competition and increase cooperation and coordination between airports, and maximum utilization of available airport capacities in the region. The agreements will establish a common framework for a regional 'Airport Consortium' that

will coordinate all airport master planning and facility construction consistent with an adopted Regional Aviation Plan. The Regional Airport Consortium will coordinate with the Maglev Joint Powers Authority to ensure seamless Maglev connections to airports, and increase air passenger ridership via Maglev through integrated fares and other market roles."[123]

It is striking that these recommendations in the 2004 RTP that relate to LAWA taking a leadership role in developing the consortium closely mirror established practices of two of the exemplars in this report: the Sacramento County Airport System (SCAS) and the New England Regional Airport Consortium. These practices include SCAS defining complementary roles and market niches for each airport in its system consistent with an overall airport system plan, and covering the financial losses at an emerging Mather Airport with fees from other system airports, while marketing it to carriers and other prospective tenants. They also include actions by the New England Regional Airport Consortium, using an MOU approach, to decentralize service in the New England airport system through regional coordination, targeted capital investments and joint marketing and promotion efforts.

A hybrid of these two exemplars would thus provide a model for an MOU approach spearheaded by LAWA, consistent with the 2004 RTP. Like SCAS, LAWA would first develop an integrated system plan for it own airports that defines complementary roles and market niches for those airports, and would then subsidize and market its newer airports to spur their development. Like Massport, LAWA would then take a lead role in developing and nurturing an MOU-based regional consortium with non-LAWA airports. The consortium would focus on promoting regional decentralization through targeted capital investments, joint marketing and coordinated ground access planning, including high-speed access to suburban airports.

Reconstituted SCRAA: A second approach is to revive and reconstitute the Southern California Regional Airport Authority, to make it consistent with the concept of the Regional Airport Consortium. By a new superceding JPA agreement between the parties, SCRAA can be turned into a simplified and more flexible organization with an emphasis upon coordinating with regional aviation planning and airport ground access planning being conducted by SCAG. A new mission, bylaws and membership would

need to be defined for the SCRAA to morph into a Regional Airport Consortium. Provisions that gave the Authority sweeping powers or compromised its effectiveness need to be eliminated, such as the powers to build and operate airports, eminent domain, and the single member veto.[124]

In the process, SCRAA's mission would be changed from finding new airport capacity to better utilization of existing capacity as the Region has run out of new airport options. Utilizing existing capacity more efficiently can be achieved through identifying non-competitive roles and cooperative relationships (recognizing that in the long run there is more than enough demand to go around), and especially through coordinating ground access planning, working hand-in-hand with SCAG in developing and implementing the Regional Transportation Plan. The new SCRAA could also perform collaborative marketing, clearinghouse, and interface functions.

Reconstituting SCRAA has real advantages. It already legally exists, embraces all of the counties where the Region's ten commercial airports are located, and reportedly has nearly $1 million in unspent member contributions.[125] Yet there are substantial uncertainties and disadvantages. First, there is the pressing need to create a quorum. Of the once-five members, the Counties of Orange and Riverside have unilaterally withdrawn, and the City of Los Angeles has chosen not to participate. Only the Counties of Los Angeles and San Bernardino have potentially active representatives drawn from their supervisorial boards. Since a quorum requires three members, and Orange and Riverside Counties have so far expressed little interest in reconsidering their withdrawals, the Authority's revival would require the City of Los Angeles to appoint a participating representative from among its elected officials.

Once a quorum is created, however, all changes in power and authority then require a unanimous vote. Since the withdrawals of Orange and Ventura Counties have not been unanimously approved by SCRAA's Board members, this means that Orange and Ventura Counties would need to rescind their withdrawals and participate again for any legal changes in power and authority to be unanimously approved. There is also the question of whether Authority and Board membership need to be reconstituted. SCRAA's track record of district-elected county supervisors as board members is not reassuring. Understandably, those supervisors motivated to serve as SCRAA board

members are individuals for whom local airport issues matter in their districts. However, regional interests have not always been faithfully represented. Should counties remain as members, it might be appropriate to rewrite the bylaws. Possible bylaw changes include imposing term limits on board members, adding seats for jurisdictions that benefit from airports, and removing the single member veto power. Finally, there is the issue of whether Ventura and Imperial Counties might be invited to join since they have commuter airports.

Thorny membership issues would need to be addressed. For instance, are counties the appropriate parties? While two of the once-five SCRAA members are commercial airport operators (the City of Los Angeles and the County of Orange), the other three county members are not. Would it make better sense to have local governments operating commercial airports as members? Also, what about county transportation commissions? Finally, there is the question of whether SCAG should be given voting membership and a greater role. All such membership changes require the unanimous consent of all SCRAA parties. The more dramatic the powers and membership changes proposed, the more difficult they will be to achieve.

A New JPA: Given the potential difficulties of reconstituting SCRAA, it might be more feasible to create a new joint powers authority with airport operators, county transportation commissions, and other relevant stakeholders as members. This might be done in conjunction with the official dissolution of SCRAA, with unspent member contributions temporarily returned to the respective parties with the understanding that these airport-devoted moneys be sent to the new JPA to jumpstart the process.

Relative to a MOU, a JPA under the California Government Code (Section 6500 *et. seq*.) can be a separate organizational entity with powers and authority bestowed upon its participating governmental jurisdictions. A JPA requires initial approval by the respective governing (legislative) bodies of the participating parties—e.g., cities, counties or public districts. Under California law, the joint powers agreement can authorize a policymaking board or commission that may—or may not—consist of elected officials.[126]

The JPA needs to be inclusive, inviting participation from jurisdictions with a vital stake either as members or in an advisory capacity (similar to the membership of the City of

Arlington on the Dallas/Fort Worth International Airport Board). But the JPA also needs to protect its decision-making process against would-be participants hostile to the organization's key missions. In terms of principles to guide the choice of decision-making procedures, consideration might be given to a consensual approach embodied in super-majority (e.g., two-thirds) voting rules. This makes building an initial consensus difficult, but also makes one achieved sufficiently inclusive. It also ensures that any policies undertaken will have sufficient support during the implementation phase.

The new JPA should initially be constituted in terms of planning and feasibility responsibilities. It too should consider launching a collaborative marketing venture, serve as a clearinghouse and interface for the region's airport operators, and identify non-competitive airport roles and cooperative relationships. It also should coordinate ground access planning, working closely with SCAG to implement the Regional Transportation Plan. It can work with the proposed Maglev JPA. Other powers and duties can be added by amendment later, as agreed to by the parties. Such powers should not include eminent domain or operating, siting and developing airports, since they are inconsistent with the Regional Airport Consortium concept in the 2004 RTP. To allay the concerns of constrained urban airports and their communities, a precondition should be that all legally enforceable constraints and policies can't be changed by subsequent amendment. As for membership, the new JPA might include airport operators, county transportation commissions, and other relevant transportation agencies such as SCAG and the Southern California Regional Rail Authority.

A Process for Selection: How might the Southern California Association of Governments select a preferred governance structure for the proposed Airport Consortium? SCAG's multi-tiered committee system offers opportunities for input and recommendations from a variety of stakeholders including airport managers as well as elected officials. First, the Aviation Technical Advisory Committee (ATAC) needs to review these three governance options and make technical recommendations. Second, the Aviation Task Force, composed of elected officials, and industry and community representatives, can make their own policy recommendations. Third, the Transportation and Communications Committee can review these two sets of recommendations, deliberate, and make their own policy recommendations. Finally, the Regional Council can choose and adopt a preferred governance structure for the Airport Consortium.

SCAG decision makers would need to weigh the relative merits of a JPA, either a reconstituted SCRAA or a new JPA, with those of an MOU-based regional governance structure. Let us consider the cost/benefit tradeoffs between the MOU versus JPA approaches.

A real advantage of the MOU is that, by having no powers, it is unlikely to be drawn into regional distributional conflicts or hijacked by member private agendas. By serving as a regional forum, the MOU can offer multiple opportunities for participation. Compared to a JPA, a MOU is easier to create and is more flexible. However, a big disadvantage is that the MOU approach lacks institutional capacity. While limiting such capacity makes the organization less threatening to those opposed to some of its goals, it also makes participation less consequential. Low incentives for participation can be a problem with the MOU approach. As a result, MOUs generally have short shelf lives. They are taken less seriously, have less political continuity, and are generally less effective.

A strategy that could be taken to minimize these shortcomings of the MOU approach would be to invest it with more structure than is typical of MOU-based organizations like the New England Regional Airport Consortium, which has no bylaws and meets on an ad hoc basis. As part of the MOU agreement, the participating parties could agree to meet on a regular basis, and develop bylaws that would structure their deliberations towards achieving identified goals and objectives. Such a "structured" MOU-based Consortium could eventually evolve into a JPA, after a period of confidence building among the members who may decide that the organization would be enhanced with the greater structure and permanence of a JPA.

A JPA composed of airport and transportation representatives and elected officials has higher startup costs in terms of getting new members to join. Getting the JPA approved by the relevant governing bodies is likely to be a time consuming and even challenging process. But approval signifies significant political buy-in and commitment from the parent jurisdictions. Like the Metropolitan Water District of Southern California, which started in 1928 with just thirteen members and now consists of twenty-six member agencies, the JPA might start out with a few committed members and have others join over time as its value is demonstrated. However, there is a minimum participation

threshold. At the very least, a new JPA requires active City of Los Angeles, Inland Empire, and SCAG participation and other forms of support.

A key advantage of a new JPA is that it can be endowed with institutional capacity. This gives it greater potential continuity and effectiveness. Durability and long shelf life are important given that devising appropriate ground access systems to suburban airports can be a time consuming process. If a JPA is the preferred solution, then it is worth considering the range of institutional arrangements that affect the entity's ability to act regionally rather than merely locally, in the long term rather a short term, and to achieve both consensus and effectiveness. As SCRAA's history shows, the institutional details of the governing legal document are highly consequential, such as voting rules, amendment procedures, and member contributions. Thus, a phased approach in terms of starting out with planning and feasibility concerns gives needed time to resolve critical issues of institutional design, mission and powers. More study is needed to identify the optimal membership, powers and duties of the JPA, and whether it should be a reconstituted SCRAA or a new JPA.

Thus, the qualitative difference between a MOU and JPA approach involves the amount of formal authority invested in the regional entity. The MOU creates little formal authority to pursue policies favored by the members. In contrast, the JPA gives the regional entity enhanced powers for achieving the collective goals of its members. This approach also commits its members to ongoing participation and decision-making processes that may result in necessary compromises for regional benefit. The JPA provides a long-term institutional device for regional cooperation and collective action, should its members opt to invest it with greater powers in the future. So, while the initial governing arrangements and functions of the MOU and JPA might not look all that different, the choice between a MOU and a JPA has great potential consequence.

AN IMPLEMENTATION PLAN

In terms of implementing a preferred structure, each option suggests a distinct implementation strategy. The MOU requires the least work, which can also lead to lessened commitment and participation. The JPA requires more startup work, including a detailed strategy for recruiting members and securing approval from the relevant

governing bodies. But this also builds in political commitment and incentives for participation. And the JPA has greater long-term potential for collective action. For both the MOU and JPA approaches, the City of Los Angeles and Los Angeles World Airports have key roles to play if the airport consortium is to become a reality.[127] The Inland Empire suburban airport operators need also to be involved at an early stage. In the early 1980s the City and its airports department played a critical role in creating the Southern California Regional Airport Authority as a vehicle for regionalization and decentralization. Since 2001, the City's failure to participate in SCRAA board deliberations consigned that organization to limbo status. Today, with a new Los Angeles Mayor, there are hopeful signs that the City and its airport system are recommitted to regionalization and decentralization. Reputedly, LAWA is committed to integrated aviation system planning, starting with its own airports and then coordinating with the region's other airports.

Supporters of the airport consortium concept for the SCAG Region would do well to study the experience of the New England Regional Airport Consortium, the Southern California Regional Airport Authority and the Sacramento County Airport System. In New England, Massport played a key initiating and facilitating role. With SCRAA, the City of Los Angeles played a similar catalytic role. The SCAS provides an example for Los Angeles World airports in developing an integrated airport system plan that identifies complementary roles and market niches for its airports. Also, in subsidizing and marketing its newer suburban airports to spur their development and promote decentralization of service. LAWA could also employ additional financial mechanisms to accomplish the goal of decentralization. These would include enacting substantially lower landing fees and other charges at its suburban airports compared to LAX to make those airports more attractive to cost-sensitive airlines. LAWA should also consider employing emission-based landing fees (linked to both air and noise emissions instead of aircraft weight) to encourage the location of the cleanest and quietest aircraft at LAX and reduce environmental impacts on heavily impacted communities surrounding the airport.

For a successful launch and initial trajectory, the Consortium also needs the support of the airlines and the region's leading business organizations. For a consortium to succeed in the long run, what seems to matter is a cooperative relationship created

between a region's leading airport operator and operators of underutilized suburban airports in the Inland Empire. They share complementary interests in reducing LAX congestion and encouraging greater utilization of outlying airports. Because airport ground access issues are paramount in the SCAG Region, the Consortium and its supporters also need to work closely from the beginning with the region's transportation agencies to determine the appropriate ground access approaches to optimally utilize Southern California's available airport capacity. Whether created by MOU or JPA, the Consortium needs to commit itself to a strategic, incremental, and flexible planning model for airport and ground access decision making in the SCAG Region.[128]

In conclusion, this Regional Airport Management Study has surveyed and evaluated the leading available alternatives in terms of governance and management structures for the SCAG Region's complex and decentralized multi-airport and ground access systems. The Preferred Aviation Plan recommends decentralizing passenger and air cargo services from congested urban airports to outlying suburban airports where capacity is available. Its implementation requires new regional governance mechanisms and strategies to better coordinate the Region's airport, ground access, and related planning and development.

This study finds that the Southern California Association of Governments should give serious consideration to recommending the creation of a "structured" MOU approach to developing a Regional Airport Consortium, with a lead, catalytic role for Los Angeles World Airports in initiating and assuring the continuity of the organization. The Consortium would have a regular meeting schedule, bylaws, and be composed of both airport and transportation agencies. It would have coordination powers, with an emphasis on ground access coordination, that are consistent with the Regional Airport Consortium concept in the 2004 RTP. Its initial charge would involve planning and feasibility. After a period of confidence building among the participating parties, the MOU-based consortium could evolve into a JPA, either a reconstituted SCRAA or a new JPA, if the members decide that greater structure, permanence and continuity would enhance the organization. The challenges of creating such an innovative entity and ensuring its effectiveness and ultimate success are great. But in terms of meeting the SCAG Region's future aviation demand, the costs of doing nothing are far greater.

NOTES

[1] SCAG's "Aviation Authority Survey" was designed to focus upon airport authorities, both domestic and non-U.S., that contained multiple airports or were multi-model transportation authorities. 15 active authorities (including Los Angeles World Airports), and one inactive authority (the Southern California Regional Airport Authority) were chosen for examination. Research questions included the Authority's creation and evolution; governance, roles, and responsibilities; coordination with other local government/transportation agencies; coordination with other non-entity owned or operated airports; and limitations upon operation. Four case studies were completed: the San Diego County Airport Authority; the Port Authority of New York/New Jersey; Massport; and the Bi-State Development Agency (St. Louis). This material has been incorporated into our Metropolitan Airport Governance and Ground Access Survey.
[2] For the ACI-NA 2003 General Information Survey findings, see www.aci-na.org/docs/GIS%20summary%20new.pdf. The U.S. airports surveyed included 20 of the 31 large hubs, 32 of the 37 medium hubs, and covered 92% of U.S. 2002 emplanements.
[3] ACI-NA, *Highlights of the 2003 General Information Survey*, p. 1.
[4] See www.faa.gov/arp/planning/npias2001/npias01.htm.
[5] See United States Government Accountability Office (GAO), *Survey of Large- and Medium-Hub Airports on Existing and Planned Bus and Rail Connections* (GAO-05-738SP) (Washington, D.C.: GAO, July 2005); and GAO, *Intermodal Transportation: Potential Strategies Would Redefine Federal Role in Developing Airport Intermodal Capabilities* (GAO-05-727) (Washington, D.C.: GAO, July 2005), 97 pp.
[6] Thus, airports featuring rail service vary in terms of whether that service goes directly to the airport or only indirectly via shuttle service to nearby rail stations. They also vary considerably in terms of the comprehensiveness of the rail system and how well is serves the region.
[7] GAO, *Intermodal Transportation*, pp. 3-4, 35.
[8] See Richard de Neufville and Amedeo R. Odoni, *Airport Systems: Planning, Design, and Management* (New York: McGraw-Hill, 2003); de Neufville, *Planning Multi-Airport Systems in Metropolitan Regions in the 1990s: Final Draft Report* (April 2000), prepared for the Federal Aviation Administration; de Neufville, *Multi-Airport Systems in the Era of No-Frills Airlines* (unpublished paper, n.d.), 19 pp.; Philippe A. Bonnefoy and Prof. R. John Hansman, *Factors Influencing the Emergence of Secondary Airports in the United States* (MIT International Center for Air Transportation, November 2004), prepared for the MIT-Global Airline Industry Program; Bonnefoy and Hansman, *Emergence and Impact of Secondary Airports in the United States* (American Institute of Aeronautics and Astronautics, 2004), 12 pp.
[9] Richard de Neufville, "Management of Multi-Airport Systems: A Development Strategy," Working Paper, Massachusetts Institute of Technology, 1995.
[10] De Neufville and Odoni, *Airport Systems*, pp. 217-25, at p. 225.
[11] Steven G. Craig, James Airola, and Manzur Tipu, "The Effect of Institutional Form on Airport Governance Efficiency," (unpublished paper, Department of Economics, University of Houston, November, 2003), 34 pp.
[12] Charles Sander, "Airport Consolidation: Trends and Opportunities" (2004), at www.unisys.com.
[13] Sander, "Airport Consolidation," p. 3.
[14] Larry S. Bourne, "Alternative Models for Managing Metropolitan Regions: The Challenge for North American Cities," paper prepared for the International Forum on Metropolitization, Santa Cruz, Bolivia, March 11-12, 1999, p. 26.
[15] David B. Walker, "Snow White and the 17 Dwarfs: From Metro Cooperation to Governance," *National Civic Review* 76:1 (January-February 1987), pp. 14-28.
[16] As noted, these are minimum public transit service levels since the quality and comprehensiveness of transit service were not measured.
[17] GAO, *Intermodal Transportation*, p. 87.
[18] The airport in Pease, NH appears to be developing into a niche market for cargo. See Allison Connolly, "Pan Am wants to share runway secret," *Boston Business Journal*, January 14, 2000.
[19] Bonnefoy and Hansman, *Emergence and Impact of Secondary Airports*, p. 3.

[20] Interviews with Betty Desrosiers, Massport Director of Aviation Planning, and Bryan Rakoff, FAA Branch Manager, Planning and Development, and former Project Manager, the New England Regional Aviation System Plan, for the Louis Berger Group.
[21] Interview with Jim Peters, FAA Public Affairs Specialist.
[22] MHT is owned and operated by the City of Manchester. PVD is owned by the state of Rhode Island and operated by the by the Rhode Island Airport Corporation (RIAC), a semiautonomous subsidiary of Rhode Island Economic Development Corporation. BDL's board of directors is comprised of appointed business leaders who assist in the development of the airport as a business, while the State of Connecticut's DOT manages its operations. Also see www.nerasp.com/basics.htm.
[23] Bonnefoy and Hansman, *Emergence and Impact of Secondary Airports*, pp. 4-5.
[24] Boston-Logan International Airport, *1999 Environmental Status and Planning Report, Executive Summary (ESPR), (EOEA #3247),* p. ES-6; Worcester Regional Research Bureau, *Job Flight From Worcester* (Report N. 04-02), January, 2004.
[25] Interviews with Betty Desrosiers and Ralph Nicosia-Rusin, FAA Airport Capacity Program Manager.
[26] Interview with Betty Desrosiers.
[27] Interviews with Ralph Nicosia-Rusin and Betty Desrosiers.
[28] Interviews with Jim Peters and Ralph Nicosia-Rusin.
[29] FAA and Massport, "FAA, New England Airports to Update Regional Aviation Plan," Press Release, September 20, 2002. The Louis Berger Group, Inc. is the consultant, project manager, and webmaster for the New England Regional Aviation System Plan. Source: www.nerasp.com.
[30] www.massport.com; interview with Betty Desrosiers.
[31] Interview with Betty Desrosiers.
[32] In addition, coordination exists between many of the RTAs and the Massachusetts Bay Transit Authority (MBTA). A major focus of interconnectivity efforts involves providing RTA feeder bus service to or near MBTA commuter rail stations.
[33] ACI-NA, *Highlights of the 2003 General Information Survey*, p. 3.
[34] Boston Region Metropolitan Planning Organization, *Regional Transportation Plan Summary*, draft March 10, 2005, p. C-18.
[35] Boston Region Metropolitan Planning Organization, *Regional Transportation Plan Summary*, draft March 10, 2005, p. C-19.
[36] Interview with Betty Desrosiers.
[37] "Keeping our existing system functional and in good repair must be our first concern...When we decide to expand the transportation system, our decisions should be preceded by strong local planning and broad stakeholder participation. We need to anticipate the changes that increased mobility will cause—both the economic growth that we seek and the sprawl that we seek to control." Daniel A. Grabauskas, Secretary of Transportation, Commonwealth of Massachusetts, introductory letter to the *State's Draft Long-term Transportation Plan*, March 2005.
[38] Boston-Logan International Airport, *1999 ESPR*, p. ES-6.
[39] Interview with Bryan Rakoff.
[40] FAA, "New England Airports to Update Regional Aviation Plan: Data Indicates Regional Airports Successful at Reducing Pressure on Logan," *New England Regional Aviation System Plan Press Release*, September 20, 2002.
[41] Boston-Logan International Airport, *1999 ESPR*, pp. ES-3, 28-29.
[42] Indeed, Massport implies its strategic marketing and visionary provision of regional service drives recent trends. "Substantial capital investments and marketing initiatives have resulted in increased passenger acceptance and use of regional airport alternative to Logan Airport… Massport's 1999 Passenger Survey confirms that aggressive service expansion at other regional airports in New England, particularly Manchester NH, and T.F. Green in Providence RI, is diverting passengers from those areas outside of Metropolitan Boston away from Logan Airport." Boston-Logan International Airport, *1999 ESPR*, p. ES-12.
[43] In October 2001 the Sacramento County Board of Supervisors passed a resolution that makes explicit the roles of each airport in the system. They include: (a) Sacramento International: scheduled airline service with some air cargo and general aviation uses; (b) Sacramento

Executive: dedicated general aviation use within the limits established by the airport's noise ordinance and weight restrictions; (c) Franklin Field: dedicated general aviation use with emphasis on flight training and preservation of open space for future general aviation development; and (d) Mather Field: either (i) dedicated air cargo use with some general aviation uses, or (ii) dedicated air cargo use with emphasis on facilities to support air cargo hub operations with some general aviation uses. See SCAG, *Destination 2030: 2004 Regional Transportation Plan* (April 2004), Appendix D-6, pp. D-6-66, 67.

[44] *Ibid.*

[45] Sacramento County Airport System, *Sacramento International Airport Master Plan*, February 2004.

[46] Sacramento County Airport System, *Mather Airport Master Plan*, February 2004.

[47] Molly Dugan, "Mather Runway Growth Protested; Draft Plan OK'd," *Sacramento Bee*, February 18, 2004. Molly Dugan, "Runway Talks Put Mather Airport's Draft Master Plan on Hold," *Sacramento Bee*, December 14, 2003.

[48] Sacramento County Airport System, Inter-Department Correspondence, February 11, 2004.

[49] Jaime Francisco, "Residents: Forum Won't Stop Noise from Mather," *Sacramento Bee*, September 23, 2004.

[50] Tony Bizjak, "Third Runway at Sacramento Airport Backed," *Sacramento Bee*, October 23, 2003.

[51] Dugan, "Runway Talks Put Mather Airport's Draft Master Plan on Hold."

[52] Steve Gibson and Tony Bizjak, "Yolo County Looks to Fix Bus Woes; High Driver Turnover Spurs Talk of a Sacramento RT Merger," *Sacramento Bee*, April 7, 2004.

[53] Sacramento Regional Transportation District, *Short Range Transit Plan, 2001*.

[54] David Whitney, "SACOG Wins National Award for Transportation Planning," *Sacramento Bee*, November 18, 2004.

[55] Mark Paul, "Suddenly, Regionalism's All the Rage," *Sacramento Bee*, December 22, 2002.

[56] Sacramento Area Council of Governments, *Draft Metropolitan Transportation Plan 2027*, June 2005.

[57] Sacramento Area Council of Governments, *Sacramento International Airport Transit Access Study*, July 2, 2000.

[58] SCAG, *Destination 2030*, Appendix D-6, p. D-6-66.

[59] De Neufville, "Management of Multi-Airport Systems: A Development Strategy."

[60] Gibson and Bizjak, "Yolo County Looks to Fix Bus Woes."

[61] Byron Okada, "Fort Worth, Texas, Dallas Competition Spurred Long-Running Aviation Rivalry," *Fort Worth Star-Telegram*, December 17, 2003.

[62] "Dallas-Fort Worth International Airport," *Handbook of Texas Online*, May 2004.

[63] Dallas/Fort Worth International Airport, *1997 Airport Development Plan Update* (1997).

[64] Bill Miller, "Dallas Airport Neighbors Fear Consequences of Increase in Flights," *Fort Worth Star-Telegram*, July 31, 2005.

[65] City of Dallas, *Dallas Love Field Airport Impact Analysis/Master Plan*, June 29, 2001.

[66] Dallas/Fort Worth International Airport, *1997 Airport Development Plan Update*, 1997.

[67] Nora Lopez, "Dallas City Council Approves $2.5 Billion for Airport Expansion," *Dallas Morning News*, December 16, 1999.

[68] Terry Langford, "New Projects May Increase Dallas Airport's Renovation Plan by $484 Million," *Dallas Morning News*, January 20, 2001; Anuradha Raghunathan, "Dallas-Area Airport Holds Off on $800 Million Bond Issue," *Dallas Morning News*, April 16, 2003.

[69] Terri Langford, "Dallas-Fort Worth Airport Adding Board Position to Represent Local Residents," *Dallas Morning News*, July 18, 2001; Terri Langford, "Surrounding Cities Seek More Input on Dallas/Fort Worth Airport's Activities," *Dallas Morning News*, February 24, 2001.

[70] "Airport Official Says Dallas-Ft. Worth Airport Needs Expansion Despite Economy," *Dallas Morning News*, August 19, 2002.

[71] Dianne Solis, "Dallas Airport Board Down a Member with Billions in Spending Due," *Dallas Morning News*, September 18, 2004.

[72] Anna M. Tinsley, "Fort Worth, Texas, Board Approves $41.4 Million Transit Budget," *Fort Worth Star Telegram*, September 5, 2003.

[73] Denton County has a separate public transit provider, the Denton County Transportation Authority.
[74] "DART Budget Approved," *Texas Construction*, November 1, 2003.
[75] Tony Hartzel, "Dallas Transit Agency Anticipates Rejection of Love Field Tunnel Funding," *Dallas Morning News*, November 23, 2004.
[76] North Central Texas Council of Governments, *Transportation: State of the Region*, Spring 2005.
[77] Bryon Okada, "Fort Worth, Texas-Area Transit Panel Pitches Linking Airports with Light Rail," *Fort Worth Star-Telegram*, October 10, 2003.
[78] DFW has studied this issue and concluded the restrictions would adversely affect DFW and the economic activities that occur around the airport, and generate more traffic and noise around Love Field. See the presentation prepared by Simat, Helliesen and Eichner, Inc., "Dallas/Fort Worth International Airport: Potential Airport Impacts – Repeal of Wright Amendment," May 2005.
[79] See Southern California Area Governments, *Destination 2030: 2004 Regional Transportation Plan*, Appendix D-6, April 2004.
[80] De Neufville, "Management of Multi-Airport Systems: A Development Strategy."
[81] Metropolitan Washington Airports Authority (MWAA), "Washington Airports Finish 2004 in Growth Trend," *MWAA Press Release*, February 3, 2005.
[82] Public Policy Research Center (PPRC), *Lambert Airport Governance*, "Final Report from the Senate Interim Committee on Regional Control of Lambert-St. Louis International Airport," February 2003, p. 3.
[83] United States Code Title 49, Subtitle VII, Part D, Chapter 491, Section 49106 (b) (D).
[84] United States Code Title 49, Subtitle VII, Part D, Chapter 491, Section 49106 (c).
[85] United States Code Title 49, Subtitle VII, Part D, Chapter 491, Section 49106 (c) (6) (A).
[86] See www.marylandaviation.com.
[87] Ryan Bagwell, "BWI Airport Seeking More International Passengers," *The Annapolis (MD) Capital*, August 1, 2005.
[88] Bagwell, "BWI Airport Seeking More International Passengers."
[89] Theodore A. Smith, "The Inherent Challenges of Securing Transportation Infrastructure: Examination of the National Capital Region," *Proceedings of the 2005 Mid-Continent Transportation Research Symposium*, Iowa State University, August 2005, p. 6.
[90] Smith, "The Inherent Challenges of Securing Transportation Infrastructure," p. 6.
[91] GAO, *Intermodal Transportation*, p. 21.
[92] GAO, *Intermodal Transportation*, p. 87.
[93] Introduced in 1962, the mobile lounge was constructed as a 54-foot long, 16-foot wide, 17 1/2-foot high vehicle that could carry 102 passengers, 71 of them seated, directly from the terminal to the aircraft on the ramp. This protected the passengers from weather, jet noise and blast, and also eliminated long walking distances. Today, Dulles operates 19 mobile lounges and 30 plane mates, which are similar to the lounges but can transport passengers from the terminals, directly onto the airplane by attaching itself to the aircraft.
[94] GAO, *Intermodal Transportation*, p. 95.
[95] COG's 19 member jurisdictions include the District of Columbia; in Maryland, Prince Georges, Montgomery and Frederick Counties, and the cities of Bowie, Gaithersburg, College Park, Greenbelt, Rockville, and Takoma Park; and in Virginia, the COG planning area includes Arlington, Fairfax, Loudoun, and Prince William Counties, and the cities of Alexandria, Falls Church, Fairfax, Manassas, and Manassas Park.
[96] Metropolitan Washington Council of Governments, *2004 Annual Report*; interview with Lee Ruck, General Counsel, Metro Washington COG.
[97] The TPB is designated as this region's MPO by the Governors of Virginia and Maryland and the Mayor of Washington based upon an agreement among the local governments. The TPB was created in 1965 by the region's local and state governments to respond to federal highway legislation in 1962 that required the establishment of a "continuing, comprehensive and coordinated" transportation planning process in every urbanized area in the United States. The TPB became associated with the Metropolitan Washington Council of Governments (COG) in 1966. The COG was established in 1957 by local cities and counties to deal with regional

concerns including growth, housing, environment, public health and safety—as well as transportation.

[98] The Baltimore Metropolitan Council, with a geographic jurisdiction of the City of Baltimore and Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties, acts as a regional MPO in the Baltimore metropolitan area. The Mayor of Baltimore and elected executives from member counties appoint a governing board of six directors.

[99] In addition to the District of Columbia, the TPB's planning area in Maryland includes Charles (St. Charles Urbanized Area), Frederick, Montgomery and Prince Georges Counties, and the cities of Bowie, College Park, Gaithersburg, Greenbelt, Rockville, and Takoma Park. In Virginia, the TPB planning area includes Arlington, Fairfax, Loudoun, and Prince William Counties, and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park.

[100] www.mwcog.org/transportation/activities/vision/default.asp.

[101] Interview with Gregory Wolfe, Secretary of the Metropolitan Washington Airports Authority.

[102] Interviews with Lee Ruck and Gregory Wolfe.

[103] Although Washington-Baltimore appears to be a relatively exemplar case in terms of airport ground access systems, a study sponsored by the National Institute of Justice's National Task Force on Interoperability concluded that planning in the transportation sector in the National Capital Region (NCR) was limited and fragmented, with planning activities typically underfunded and rarely conducted in the context of the region as whole. See Smith, "The Inherent Challenges of Securing Transportation Infrastructure," p. 8.

[104] Metropolitan Washington Airports Authority, "Message from Richard Norris: Air Cargo Development Manager," *Gateway* 3:1 (Spring 2000).

[105] In addition, The Washington Air Cargo Association (WACA) has been established with the mission of promoting air cargo growth in the Washington metropolitan region. WACA has elected four officers representing a major cargo airline, a logistics operator, an international consultant, and MWAA.

[106] According to Richard Norris, MWAA Air Cargo Development Manager, Chateauroux Airport in France and the Shenzhen Huangtian International Airport are joint partners and several other airports have expressed an interest in joining.

[107] Clifton A. Moore, *Oral History Interview* (Center for the Study of Los Angeles, Loyola Marymount University, August 16, 2001); Los Angeles Department of Airports, *Study of a Proposal to Establish a Regional Airport Authority* (1976); SCAG, "The Southern California Regional Airport Authority," (n.d.), pp. 1-2; Steven P. Erie, *Globalizing L.A.: Trade, Infrastructure, and Regional Development* (Stanford: Stanford University Press, 2004), pp. 104-105. The authors wish to thank Peggy Ducey, former SCRAA Chief Executive Officer, for graciously sharing SCRAA memoranda and staff reports.

[108] Southern California Regional Airport Authority (SCRAA), "Original Purpose and Future Role of SCRAA," (2001), 3 pp.; Moore, *Oral History Interview*; SCAG, "The Southern California Regional Airport Authority," p. 3.

[109] Interview with Peggy Ducey; SCRAA, "Original Purpose and Future Role of SCRAA"; Erie, *Globalizing L.A.*, pp. 199-200.

[110] See SCRAA, *Joint Powers Agreement Creating a Regional Airport Authority to be Known as the Southern California Regional Airport Authority* (1985); SCRAA, "Original Purpose and Future Role of SCRAA".

[111] SCRAA, "Original Purpose and Future Role of SCRAA"; SCAG, "The Southern California Regional Airport Authority," pp. 4-5.

[112] SCRAA, "Original Purpose and Future Role of SCRAA"; SCAG, "The Southern California Regional Airport Authority," p 5; Orange County Regional Airport Task Force, *Report* (December 10, 1991), 4 pp, at p. 3.

[113] Erie, *Globalizing L.A.*, pp. 199-200.

[114] Erie, *Globalizing L.A.*, p. 200.

[115] SCAG, "The Southern California Regional Airport Authority," p. 1; SCRAA, "Original Purpose and Future Role of SCRAA".

[116] SCAG, "Regional Airport Authority Strategies," *Memo* (March 27, 2001), 10 pp.; SCRAA, "Regional Aviation Planning Process: Roles and Responsibilities of SCAG and the SCRAA" (2001), 3 pp.; SCRAA, "SCAG Role in Regional Aviation Planning" (2001), 2 pp.
[117] SCRAA, "Regional Aviation Planning Process," pp. 1-2.
[118] Interview with Peggy Ducey.
[119] Moore, *Oral History Interview*.
[120] Interview with Peggy Ducey.
[121] See David B. Walker, "Snow White and the 17 Dwarfs: From Metro Cooperation to Governance," *National Civic Review* 76:1 (January-February 1987), pp. 14-28.
[122] SCAG, *Destination 2030: 2004 Regional Transportation Plan* (April 2004), Appendix D-6, pp. D-6-8,9.
[123] *Ibid.*
[124] Interview with Austin Wiswell, Director, Caltrans Division of Aeronautics.
[125] Interview with Austin Wiswell.
[126] See State of California, *Government Code*, Sections 6506-6508.
[127] Interview with Ruth Galanter, former City of Los Angeles Councilmember; and interview with Dan Garcia, former President, Los Angeles Board of Airport Commissioners.
[128] See Richard de Neufville, "Management of Multi-Airport Systems: A Development Strategy," Working Paper, Massachusetts Institute of Technology, 1995.